



STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT | KE KAHUWAI PONO
P.O. BOX 621
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STAFF SUBMITTAL

for the meeting of the
COMMISSION ON WATER RESOURCE MANAGEMENT

June 20, 2023
Honolulu, Hawai'i

Adoption of the Maui Island Water Use and Development Plan for
Incorporation into the Hawai'i Water Plan

SUMMARY OF REQUEST:

Staff recommends the Commission on Water Resource Management (Commission) adopt the County of Maui's Maui Island Water Use and Development Plan (Maui Island WUDP).¹

AUTHORITY:

The State Water Code's Declaration of Policy (HRS 174C-2(b)) recognizes the need for comprehensive water resources planning and establishes the Hawai'i Water Plan (HWP) as the guide for developing and implementing this policy. The HWP is intended to serve as a continuing long-range guide for the Commission in executing its general powers, duties, and responsibilities assuring economic development, good municipal services, agricultural stability, and environmental protection.

The HWP currently consists of five major components (plans) identified as the: 1) Water Resource Protection Plan, 2) Water Quality Plan, 3) State Water Projects Plan, 4) Agricultural Water Use and Development Plan, and 5) County Water Use and Development Plans.

The Water Code recognizes that the HWP must be continually updated to remain useful and relevant and further specifies that "[e]ach county shall update and modify its water use and development plans as necessary to maintain consistency with its zoning and land use policies" §174C-31(q) HRS.

Exhibit 1 summarizes the agencies responsible for preparing each of the five components and the primary objectives of each of the HWP components.

¹ Link to Maui Island Water Use and Development Plan
<https://waterresources.mauicounty.gov/DocumentCenter/View/608/Ord-5335>

WATER USE AND DEVELOPMENT PLAN (WUDP)

A separate WUDP is to be prepared by each of the four counties and adopted by ordinance. The objective of the WUDPs is to set forth the allocation of water to land use in that county. Administrative Rule §13-170-31 states that each WUDP shall include, but not be limited to:

- (1) *Status of county water and related land development including an inventory of existing water uses for domestic, municipal, and industrial users, agriculture, aquaculture, hydropower development, drainage, reuse, reclamation, recharge, and resulting problems and constraints;*
- (2) *Future land uses and related water needs; and*
- (3) *Regional plans for water developments including recommended and alternative plans, costs, adequacy of plans, and relationship to the water resource protection plan and water quality plan.*

Additional guidelines for preparing the WUDPs are provided in Administrative Rule §13-170-32:

- (1) *Each water use and development plan shall be consistent with the water resource protection plan and the water quality plan.*
- (2) *Each water use and development plan and the state water projects plan shall be consistent with the respective county land use plans and policies, including general plan and zoning as determined by each respective county.*
- (3) *Each water use and development plan shall consider a twenty year projection period for analysis purposes.*
- (4) *The water use and development plan for each county shall also be consistent with the state land use classification and policies.*
- (5) *The cost of maintaining the water use and development plan shall be borne by the counties; state water capital improvement funds appropriated to the counties shall be deemed to satisfy Article VIII, section 5 of the State Constitution.*

STATEWIDE FRAMEWORK FOR UPDATING THE HAWAI‘I WATER PLAN

HRS Section 174C-31(n) provides that “[t]he commission may add to the Hawai‘i water plan any other information, directions, or objectives it feels necessary or desirable for the guidance of the counties in the administration and enforcement of this chapter”.

In February 2000, the Commission adopted the Statewide Framework for Updating the Hawai‘i Water Plan (Framework). The objectives of developing and outlining a statewide framework for the Hawaii Water Plan are:

- To achieve integration of land use and water planning efforts that are undertaken by federal, state, county, and private entities so that a consistent and coordinated plan for the protection, conservation and management of our water resources is achieved;
- To recommend guidelines for the HWP update so that the plan and its component parts are useful to the Commission, other state agencies, the counties, and the general public;
- To develop a dynamic planning process that results in a "living document" for each component of the HWP which will provide county and state decision-makers with well

formulated options and strategies for addressing future water resource management and development issues;

- To better define roles and responsibilities of all state and county agencies with respect to the development and updating of the HWP components;
- To describe and outline the techniques and methodologies of integrated resource planning as the basic approach that should be utilized in developing and updating the County WUDPs;
- To facilitate permitting and to identify potential critical resource areas where increased monitoring or baseline data gathering should proceed;
- To establish an overall schedule for phased updating of the HWP; and
- To outline an Implementation Plan for near-term and long-term actions.

The Framework (2000) includes the following recommended plan elements for the County WUDP update process:

- County-Specific WUDP Project Description
- Coordination with Commission on Water Resource Management
- Stakeholder and Public Involvement
- Development of Policy Objectives and Evaluation Criteria
- Description of Water System Profiles
- Identification of Resource and Facility Options
- Development and Evaluation of Strategy Options
- Implementation Plan

The Framework (2000) further recommends integration of HWP components at the county level and advocates the use of an integrated resource planning (IRP) approach. IRP is a comprehensive form of planning that encompasses least-cost analyses of resource management options, as well as a participatory decision-making process. It involves the development of water resource alternatives that take into consideration communities and environments that may be affected, the numerous institutions concerned with water resource development and protection, and the potential for competing policy goals.

In adopting the Framework (2000), the Commission recognized that each county faces a unique set of conditions that have an impact on the county's planning process, including:

- The nature and occurrence of water resources and existing infrastructure in the county;
- The planning issues and water use priorities the county must address;
- The financial resources available to the county; and
- The financial and organizational structure that has been established by its County Council and administration.

Thus, the Framework (2000) recognizes the need for appropriate flexibility to encourage innovation as well as to accommodate unique and county-specific concerns that may be addressed within the WUDP. In light of the above conditions, the Framework requires that each county develop a scope of work for updating its WUDP which best meets its overall objectives. The process by which these objectives are to be achieved should be set forth in a detailed project description and schedule for updating the County WUDP. The Maui Island WUDP was developed using the Framework (2000).

Commission staff has begun an update of the Framework (2000). This update began in 2019 with the goal of creating a more holistic framework for water planning by building more explicitly on the unique cultural foundation and values of Native Hawaiians. Once completed, this update will undergo a formal adoption process, which includes statewide public hearings, outreach programs to community, and a vote by the Commission. Subsequent HWP components will need to be consistent with the new Framework once adopted. This includes the Maui Island WUDP.

MAUI ISLAND WATER USE AND DEVELOPMENT PLAN AND COMMUNITY OUTREACH

At its August 15, 2012 meeting, the Commission approved the project description for an update of the Maui Island Water Use and Development Plan (Maui Island WUDP), which was submitted by the County of Maui.

After approval of the project description by the Commission, Maui Department of Water Supply (Maui DWS) staff began developing the plan. This development process involved many years of outreach programs with more than 70 meetings including (see Exhibit 3 for a complete listing of outreach/community meetings).

The Maui Island WUDP submitted today for approval applied the following methodology for each aquifer sector area of the island to achieve a framework for integration of land use and water infrastructure planning:

1. Identify issues, concerns and objectives
2. Assess regional water resources
3. Identify settlement patterns and cultural resources
4. Identify existing and projected land use
5. Identify existing water use
6. Project future water needs
7. Analyze water source adequacy
8. Propose strategies to meet planning objectives
9. Define implementation process

A draft plan with the above information was submitted to the Maui Board of Water Supply on January 22, 2019.

Per the requirement that the plan be adopted by ordinance by the County², the draft Maui Island WUDP (with Board of Water Supply comments) was then submitted to the Maui County Council for review on March 22, 2019.

Under the examination by members of the Maui County Council, more information was added to the Maui Island WUDP to reflect major water resource decisions and actions that occurred during 2018 and 2019. These included:

² Staff recognizes the inherent challenges of making substantial changes to plans *after* County Council adoption. As such, staff will be amending this step in the WUDP planning process as part of the Framework update and future administrative rule updates to ensure Commission approval and county council adoption work in tandem.

1. Contested cases, integrating designated surface water management area water use permits, interim instream flow standards and appurtenant rights
2. Interim instream flow standard assessments and decisions
3. Adopted revisions to aquifer sustainable yields
4. Published agricultural plans and irrigation projections for Mahi Pono LLC

This new information resulted in changes to the executive summary, Chapters 14, 15, 16, and 19.

Councilmember Shane Sinenci conducted additional outreach³ to the community on the plan, which informed recommended strategies and ultimately approval by the County Council. This included outreach to the Native Hawaiian community and ‘Aha Moku Council.

With these new amendments to the draft Maui Island WUDP, it unanimously passed the final reading of the Maui County Council on February 4, 2022 and was signed into law as an ordinance (Ordinance 5335) on February 7, 2022.

Following the Maui County Council ordinance process, the Maui Island WUDP was submitted to the Commission for adoption as an update to the HWP.

Link to document: <https://waterresources.mauicounty.gov/DocumentCenter/View/608/Ord-5335>

ANALYSIS/ISSUES

Staff Analysis:

I. Consistency with State Water Code Requirements and Recommended Framework Elements

After reviewing the document submitted to the Commission for adoption, staff concludes that the Maui Island WUDP meets the statutory requirements set forth in the State Water Code §174C-31 and sufficiently addresses the recommended elements in the Framework (2000) pertaining to the update of the County WUDPs.

Requirement/Recommendation	Compliance achieved?
<i>Status of county water and related land development including an inventory of existing water uses for domestic, municipal, and industrial users, agriculture, aquaculture, hydropower development, drainage, reuse, reclamation, recharge, and resulting problems and constraints</i>	Addendum, Sections 8, 14, 15, 16, 17, 18, and 19
<i>Future land uses and related water needs</i>	Addendum, Sections 9, 14, 15, 16, 17, 18, and 19
<i>Regional plans for water developments including recommended and alternative plans, costs, adequacy of plans, and relationship to the</i>	Addendum, Sections 14, 15, 16, 17, 18, and 19

³ An extensive overview of the outreach efforts led by Councilmember Sinenci was provided at the March 21, 2023 Water Commission Meeting. A recording of that meeting can be viewed here <https://vimeo.com/810641227>

<i>water resource protection plan and water quality plan</i>	
<i>Each water use and development plan shall be consistent with the water resource protection plan and the water quality plan</i>	Sections 14, 15, 16, 17, 18, and 19
<i>Each water use and development plan and the state water projects plan shall be consistent with the respective county land use plans and policies, including general plan and zoning as determined by each respective county</i>	Sections 7, 14, 15, 16, 17, 18, and 19
<i>Each water use and development plan shall consider a twenty year projection period for analysis purposes</i>	Sections 9, 14, 15, 16, 17, 18, and 19
<i>The water use and development plan for each county shall also be consistent with the state land use classification and policies</i>	Sections 7, 14, 15, 16, 17, 18, and 19
<i>County-Specific WUDP Project Description approved by CWRM</i>	Approved by CWRM on August 15, 2012
<i>Coordination with the Commission</i>	Maui DWS provided briefings to the Commission and met with Commission staff prior to completing the draft plan. Commission staff also worked closely with Maui DWS to provide data for the plan.
<i>Stakeholder and Public Involvement</i>	Several meetings were held during the development of the Maui Island WUDP. These are summarized in Appendix 11.
<i>Development of Policy Objectives and Evaluation Criteria</i>	Executive summary, Sections 2 and 3
<i>Description of Water System Profiles</i>	Sections 11, 14, 15, 16, 17, 18, and 19
<i>Identification of Resource and Facility Options</i>	Addendum, Sections 11, 14, 15, 16, 17, 18, and 19
<i>Development and Evaluation of Strategy Options</i>	Sections 11, 12, 14, 15, 16, 17, 18, and 19
<i>Implementation Plan</i>	Addendum, Section 13

The envisioned outcomes, benefits, and products support the Commission's duties and responsibilities set forth in HRS §174C-5, the requirements of the HWP described in HRS §174C-31, and the requirements for the WUDP described in the Administrative Rules.

Public Testimony:

After receiving the Maui Island WUDP from the County of Maui, and after issuing a 90-day public notice, Commission staff held a public hearing on September 21, 2022, on Maui to solicit comments on the plan.

Commission staff received both oral and written testimony on the Maui Island WUDP. The majority of testimony received was in opposition to the adoption of the plan. Some of the reasons and major themes for opposing the plan's adoption are summarized below:

1. The plan is difficult to read and should have been prepared by a planning consultant
2. The plan relies on old data and should be updated based on current water use and availability
3. Not enough outreach was done to fully understand the current and future water needs of certain stakeholders
4. The impact of Community Water Authorities needs to be considered in the plan
5. Elements from the Ha'ikū – Pā'ia community plan needs to be incorporated
6. No information about how the Upcountry water meter list will be resolved
7. Ha'ikū aquifer is identified as a major source of water for island's population, but little is known about the aquifer
8. Certain types of water uses should not be allowed, such as hotel and commercial uses
9. Climate change impacts are not considered
10. Water conservation targets are not aggressive enough
11. Concerns that the Lahaina water management area designation will impact WUDP findings

The written testimony and a summary of the oral testimony received is attached as Exhibit 4.

Commission staff appreciates the time and effort made by testifiers to comment on the Maui Island WUDP. We would like to offer the following responses to the concerns identified. Underlined text has been made part of the staff recommendation on page 10.

1. The plan is difficult to read and should have been prepared by a planning consultant

Response:

All plans to be reviewed by the public should provide a summary of important data and policies that is easy to understand with key terms defined. Although this is not an explicit requirement in the Water Code or the Framework (2000), this can be a helpful communication tool. The Maui Island WUDP provides a lengthy executive summary that seeks to strike a balance between summarizing the data and providing enough background information for decision makers. Although the plan's executive summary is approximately double the average of other water use and development plans (approx. 20 vs 50), this can be attributed to the additional information that was added during the County Council review process. In response to the concerns raised, Maui DWS will hire a consultant to write a "Maui Island WUDP Summary" document which should be available in the next 9-12 months after approval (Staff Recommendation #1). Maui DWS has already added hyperlinks to the Table of Contents, headings, tables, and figures to make it easier to navigate between sections. The Maui Island WUDP can be found online at the Maui DWS website.⁴

2. The plan relies on old data and should be updated based on current water use and availability

Response:

The Framework (2000) recommends that the HWP components should be treated as "living documents" as the data utilized to create the plans becomes outdated the moment the plans are developed. The staff recommendations included at the end of this submittal are a first attempt to

⁴ <https://waterresources.mauicounty.gov/DocumentCenter/View/608/Ord-5335>

employ the “living document” concept by adding special conditions to the approval of this WUDP. This includes the creation of a “Maui Island WUDP Summary” document. In addition to providing a more synthesized overview of the plan, the summary document should clearly articulate what charts, figures, tables, and data have been amended, and when relevant, provide links to the updated data source (Staff Recommendation #1). Maui DWS will continue to conduct outreach to stakeholders (per the Maui Island WUDP Island-Wide Strategies and Recommendations, Table 13-1) regarding future data-related needs and relevant updates that will be incorporated into the next update of the Maui Island WUDP.

The Framework (2000) also recommends that high, medium, and low projections of population growth and related water use be developed so that a range of outcomes can be considered. During the County Council review process, the 2020 addenda that resulted from the process did result in updated demand projections. The Commission is also awaiting completion of a USGS study (estimated completion date is Fall 2023), which will show how climate change will impact future recharge. This data will provide the basis to analyze how changes in groundwater availability under climate change will impact County land use planning. Commission staff and Maui DWS will incorporate the findings of the USGS study on climate change impacts to groundwater recharge into their water planning documents, including future updates of the Maui Island WUDP and updated sustainable yields (Staff Recommendation #2).

3. Not enough outreach was done to fully understand the current and future water needs of certain stakeholders

Response:

Beginning in 2012, the County spearheaded a robust outreach effort that involved many years of engagement with community stakeholders and more than 70 meetings. In addition, Councilmember Shane Sinenci conducted supplementary outreach programs, which informed recommended strategies and ultimately led to approval by the County Council. This included outreach to the Native Hawaiian community and ‘Aha Moku Council. The Maui Island WUDP also recognizes and respects all Commission-established interim instream flow standards and Commission decision and orders for the Island of Maui, which address those community needs. The recently established Maui community water authorities are envisioned to provide enhanced local input in decision making and watershed management and would be an integral part of any updates of the Maui Island WUDP. Despite these efforts, there continues to be a concern that not enough was done to fully understand and quantify the water needs of specific citizen groups and that the data in the plan does not accurately reflect these needs. To address this concern, Maui DWS will organize meetings annually with the Kahikinui, Hana, Ko‘olau, Central, Lahaina, and Wailuku Aquifer Sector stakeholder groups to better quantify water needs of residents, including traditional kuleana users, rural residents, and small farmers. Feedback and data from these meetings will be incorporated into a future update of the Maui Island WUDP (Staff Recommendation #3).

4. The impact of Community Water Authorities needs to be considered in the plan

Response:

In 2022, Maui residents voted to approve the creation of the East Maui Community Water Authority.⁵ The goal of the ballot measure was to give local communities more oversight over the

⁵ <https://mauicounty.gov/DocumentCenter/View/134668/Reso-22-119-CD1-FD2>

management of East Maui's water resources. There still is some uncertainty about the final shape and form of the Community Water Authorities. Our current understanding is that the goals and objectives of these entities would need to be enunciated prior to incorporating that data into the HWP. Inclusion of the East Maui Community Water Authority and its nexus to the Commission and water resource management and planning will be part of a future Maui Island WUDP update.

5. Elements from the Pā'ia - Ha'ikū community plan needs to be incorporated

Response:

The 1995 Pā'ia - Ha'ikū Community Plan asserts that an adequate supply of groundwater for residents of the region should be met before water is transported to other regions of the island. This policy is reflected in the Maui Island WUDP strategies in sections 15.1.1, 15.8.1, 15.8.2, 15.8.3, 16.1.1, 16.1.2, 16.8.2, and 16.8.3. Maui DWS is currently investigating source development strategies to meet the needs of the Pā'ia - Ha'ikū community along with regional needs and is committed to ensuring these strategies are consistent with the respective county community plans.

6. No information about how the Upcountry water meter list will be resolved

Response:

According to the Maui Island WUDP, an additional 6.3 million gallons of water per day (MGD) of source is needed to satisfy the current Upcountry water meter list. Chapter 15.8.3 in the plan addresses the issues, background and strategies to resolve the Upcountry Priority Water Meter List. Water shortage on the Maui DWS Upcountry System resulted in the waiting list with applicants serviced in chronological order, regardless of the location and source of the project. Water demand associated with the Priority List is considered additional committed water beyond population growth. New reliable source and improved processing of applications are needed to satisfy the Priority List. Maui Island WUDP strategies include 1) Develop basal wells to provide reliable capacity; and 2) Assess alternative options to restructure and process the Priority List, such as separating the Priority List by service area and source to expedite projects with available capacity and public-private partnerships to develop infrastructure that benefit end users of the same sub-system.

7. Ha'ikū aquifer is identified as a major source of water for island's population, but little is known about the aquifer.

Response:

As stated in the Maui Island WUDP, potable development of groundwater in the Ha'ikū aquifer is subject to comprehensive hydrologic studies and the terms of the East Maui Consent Decree. It is our understanding that more research and analysis will need to be conducted prior to any new source development in the aquifer. Maui DWS has submitted its FY24-25 budget, which includes funding requests to conduct a Phase 1 hydrologic study of the Ha'ikū aquifer in collaboration with USGS and plans for two Deep Monitor Wells to provide long-term data on aquifer health and changes to groundwater availability. Phase 1 of the hydrologic study will evaluate the potential connection between groundwater and surface water and define the hydrologic conditions. Funding for Phase 2 is anticipated in FY26 and will construct a numerical groundwater model to evaluate the effects of additional withdrawals on streamflow, coastal discharge and salinities in wells. Maui DWS will

report back to the Commission within one year with an update on the status of the USGS hydrologic study of the Ha‘ikū aquifer (Staff Recommendation #4).

8. Certain types of water uses should not be allowed, such as hotel and commercial uses

Response:

A requirement of the Maui Island WUDP is consistency with County land use plans. Therefore, commercial water needs, such as water for hotels, appears in the plan because of land uses identified in the community development plans. Commercial and other reasonable and beneficial uses of water uses are allowed while ensuring protection of public trust purposes of water. Commission staff is working with the County and other partners to investigate opportunities for recycled water (R-1) use and water efficient fixtures in areas of West Maui in an effort to free up potable water supply. In order to identify potable water losses and inefficiencies Maui DWS is also working with the Commission to conduct annual Water Audits using American Water Works Association (AWWA) guidelines.

9. Climate change impacts are not considered

Response:

Although not a statutory requirement or recommendation in the current HWP Framework (2000), climate change impacts are considered throughout the Maui Island WUDP (e.g. Section 4, Section 5, Section 9.5, Appendix 6). In the near future the U.S. Geological Survey (USGS) will complete its study on groundwater recharge and changes that may occur in 2040 and at the end of the century based on climate modeling. When this data is publicly released, Commission staff will work with all the HWP preparers to ensure that the findings of the study is incorporated into their water planning as part of the Framework update.

10. Water conservation targets are not aggressive enough

Response:

We agree that threats to our water security from climate change necessitate aggressive water conservation targets. However, neither the Water Code nor the HWP Framework (2000) have requirements for specific water conservation targets. There is a requirement to consider water conservation in developing the HWP components and we applaud the County for identifying an 8% per capita water conservation target in the Maui Island WUDP. Commission staff will work with Maui DWS to achieve their water conservation targets by implementing the findings of their annual water audit and improving the water loss control program (Staff Recommendation #5). In addition, Commission staff are in the process of compiling a list of water system improvements based on water audit findings for systems within the newly designated Lahaina ground and surface water hydrologic boundaries. This information will be used to inform the review of water use permit applications as part of ongoing efforts to conserve water in West Maui.

11. Concerns that the Lahaina water management area designation will impact WUDP findings

Response:

On June 14, 2022, the Commission approved the Chair’s recommendation to designate the Lahaina Aquifer Sector Area as both a Surface and Ground Water Management Area. The effective date of this surface and ground-water management area designation was August 6, 2022, which means

existing users have one year to submit applications for water use permits. Water use permits for both existing and new use will be brought to the Commission on an individual basis for review. The Maui Island WUDP will be used to inform Commission staff of recommendations on any new permits in the Lahaina Water Management Area. The approval of any water use permits will be done at a public meeting where community concerns can be expressed prior to action by the Commission. Designation will complement the county's management of water resources by ensuring additional oversight and permitting requirements for the Lahaina area.

V. Chapter 343 – Environmental Assessment (EA) Compliance

Chapter 343 is not applicable to the proposed action. §HAR 11-200-5(d) provides:

For agency actions, chapter 343, HRS, exempts from applicability any feasibility or planning study for possible future programs which the agency has not approved, adopted, or funded. Nevertheless, if an agency is studying the feasibility of a proposal, it shall consider environmental factors and available alternatives and disclose these in any future assessment or subsequent statement. If, however, the planning and feasibility studies involve testing or other actions which may have significant impact on the environment, then an environmental assessment shall be prepared.

The water use and development plans are planning studies, which do not involve testing or other actions that will impact the environment. Therefore, HRS Chapter 343 is not applicable to this agency action.

RECOMMENDATION:

Staff recommends that the Commission adopt the Maui Island Water Use and Development Plan for incorporation into the Hawai'i Water Plan.

Commission staff will also commit to work with the County of Maui on the following:

1. Maui DWS will hire a consultant to write a "Maui Island WUDP Summary" document of the plan for public consumption. The summary document should clearly articulate what charts, figures, tables, and data have been amended and when relevant provide links to the updated data source.
2. Commission and Maui DWS will incorporate the findings of the USGS study on climate change impacts to groundwater recharge into water planning documents, including the Maui Island WUDP and updated sustainable yields;
3. Maui DWS will organize meetings annually with the Kahikinui, Hana, Ko'olau, Central, Lahaina, and Wailuku Aquifer Sector stakeholder groups to better quantify water needs of residents, including traditional kuleana users, rural residents, and small farmers. Feedback and data from these meetings will be incorporated into a future update of the Maui Island WUDP;
4. Maui DWS will report back to the Commission within one year with an update on the status of the USGS hydrologic study of the Ha'ikū aquifer; and

5. Commission staff will continue to work with Maui DWS to support development of their water conservation programs, including water loss control components that implement the findings of completed annual water audits.

Respectfully submitted,



M. Kaleo Manuel
Deputy Director

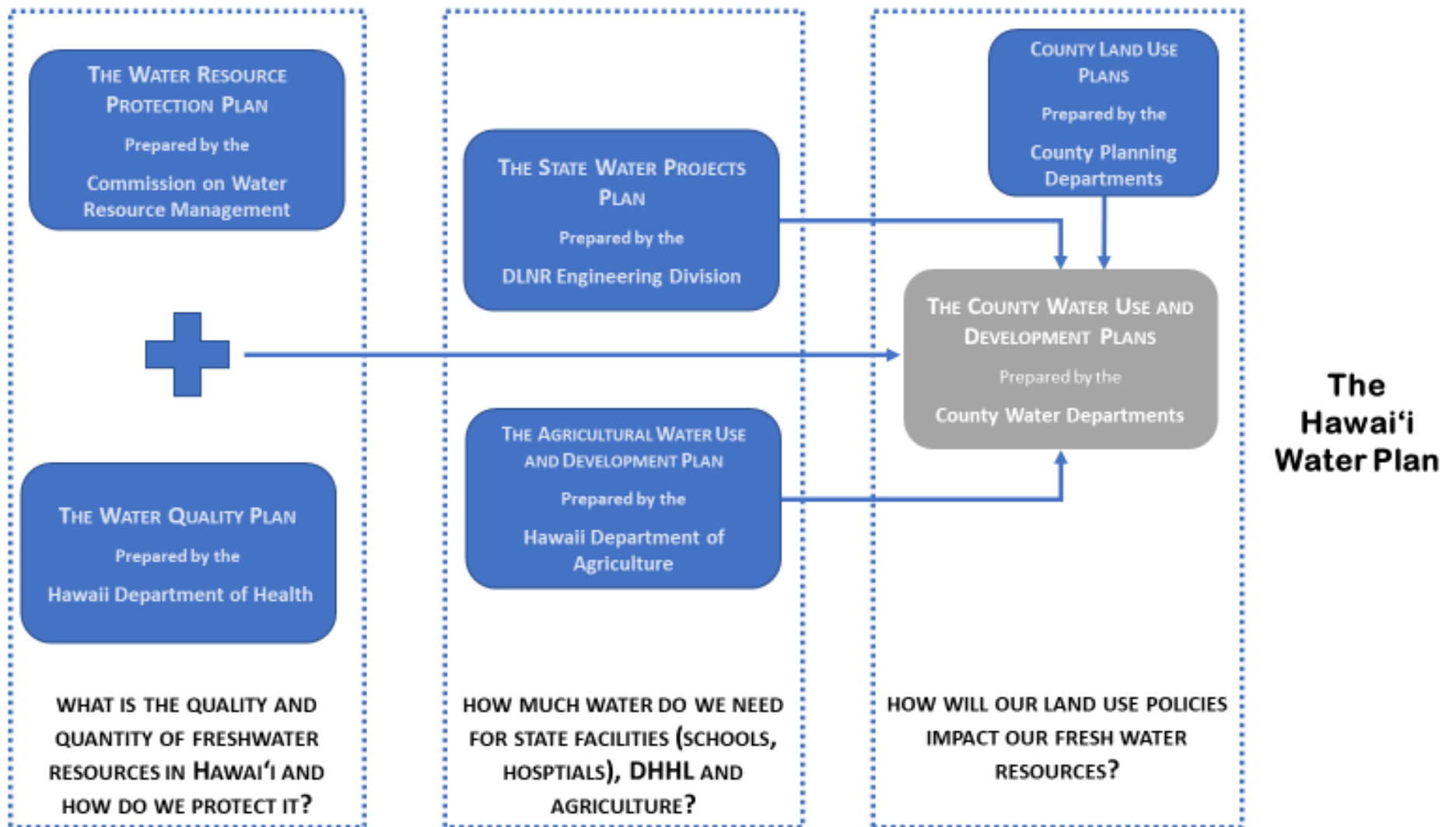
Exhibit (s):	1	Hawai'i Water Plan Components
	2	Project Description for the Maui Island Water Use and Development Plan Update
	3	Summary of Outreach Meetings for the Maui Island WUDP
	4	Public Testimony Received
	5	Maui Island WUDP Implementation Matrix

APPROVED FOR SUBMITTAL:



Dawn Chang
Chairperson

EXHIBIT 1 Hawai'i Water Plan Components



Maui Island Water use & Development Plan Update Project Description – Revised August 2012

I. Project Description

The Project Description of the Maui Island WUDP includes:

- Technical Approach;
- Methodology for Water Resources and Planning;
- An outline of the County's plan for establishing planning objectives and evaluation criteria;
- Incorporation of the Maui Island Plan land use policies, zone changes;
- Demand forecasts & Uncertainties
- Source Development Options, Impacts and Selection Process
- Incorporation of the current and foreseeable development and use needs of the Department of Hawaiian Homelands;
- A description of the public/stakeholder process for participation and public information program;
- A description of how information from the State Water Projects Plan and the Agricultural Water Use and Development Plan will be integrated and used in updating the Maui Island WUDP;
- An description of how the following will be identified:
 - Water demand forecasts
 - Conservation and demand side management programs
 - Results and outcomes of Maui County Watershed Partnerships programs
 - Source development options and potential impacts to the resource
 - Development and integration of resource development strategies
 - Impacts of climate change on the resource and consumption demands
- A schedule of the County's update of the WUDP to include:
 - Dated benchmarks of a phased approach reflecting the County's planning effort
 - Schedule to include the approximate dates and anticipated duration for public participation;
 - Approximate timeframe for the County WUDP approval process and submission of the Maui Island WUDP to the CWRM for adoption;
 - Approximate schedule for CWRM (and staff) briefings by the County.

II. Technical Approach

The primary objective of the Maui County Water Use & Development Plan is to provide guidelines for the management of the island's water resources to ensure that future water needs of the County are met while preserving the integrity of the island's water resources. Key to the success of the Maui County WUDP is to coordinate water use with land use policies set by the Maui Island Plan and the State of Hawaii. The 2003 Maui County

Code (Chapter 11, Section 8-11.2) states “The department of water supply shall implement the county’s general plan and community plans in the administration of its affairs (Amended 2002, 1988).”

As required by the Hawaii Water Plan framework data and analyses will be based on groundwater hydrologic units and surface water hydrographic units designated by the CWRM. There are seven aquifer sectors on Maui Island. Table 1 lists the aquifer sectors, geographical area of coverage, and sustainable yield.

Table 1 – Aquifer Sectors

Sector	Area (Acres)	Sustainable Yield (MGD)
Central	147,102	26
Koolau	86,044	175
Kahikinui	72,349	34
Lahaina	61,459	34
Wailuku		
Hana	57,324	122
Maui Island	466,102	427

III. Methodology for Water Resources and Planning

The WUDP update is prepared in accordance with the CWRM “Statewide Framework for Updating the Hawaii Water Plan”. An “integrated resource planning” approach is used which includes identifying planning objectives, determining future water needs, identifying all feasible means to meet future water needs and determining, by careful analysis, the best strategy to meet the planning objectives and future needs.

Water resource planning for the County WUDP will integrate land use based water demand projections and population rate of growth for future water needs per the information within the 2012 Maui Island Plan. The intent is to determine the sustainability of the water needs associated with the capacity of the public and private water systems to meet the demand of the potential full-build out development as identified in the Maui Island Plan. Water consumption, including both public and private water systems, will be compared to the incremental water needs for the next 20 years as proposed based on the Maui Island Plan population and rate of growth projections.

The development of the Maui Island Water Use and Development Plan will be accomplished through the completion of five stages. Of note, while much of the development of the WUDP will be accomplished in a chronological fashion as work progresses from stage to stage, many tasks and objectives from different stages can be accomplished simultaneously. The proposed process is described below:

Stage I Identify Planning Objectives and Evaluation Criteria

Initial identification of the planning objectives will occur through the results of comprehensive research of relevant planning documents such as the Maui Island Plan, in addition to input on water resource planning issues as received from Public and Stakeholder meetings and agency feedback. Upon the completion of comprehensive research and outreach to the public, stakeholders and relevant government agencies and organizations, selection and prioritization of the planning objectives and evaluation criteria will be accomplished utilizing Integrated Resource Planning (IRP). Through the IRP process, the planning objectives selected will form the basis in which to apply the resource scenarios for evaluation. The planning objectives to be identified for the Maui Island WUDP will be precise, qualitative and quantifiable. Through the application of IRP, tradeoffs will be made among conflicting objectives in order to reach community consensus and result in a balanced approach.

Planning Objectives and Evaluation Criteria will be identified by:

1. Research and review of relevant Island wide, state and federal planning documents (including State Water Plan, State Water Quality Plan, State Water Resources Plan)
2. Input received from public and stakeholder meetings, including DHHL

Stage II Identify Existing and Future Water Demand for all Water Use Categories

Data relative to accomplishing the identification of Island wide (public and private water systems) existing and future water demand will be collected and analyzed for potential impacts, existing and future demands for all CWRM water use categories (e.g. agriculture, residential and nonresidential domestic, industrial, irrigation and municipal). We will be reliant upon best available data from Commission on Water Resources Management, the US Geological Survey (past and ongoing hydrological studies), Department of Health and other state and federal agencies as appropriate. Additionally, source development and water management strategies will be assessed against the established planning objectives and evaluation criteria as established in the previous stage.

Completion of the tasks in this stage will be accomplished by the following:

1. Compilation and analysis of existing Island wide water demand estimates for both public and private water systems
2. Analysis and evaluation of water resource adequacy
3. Collection of available surface and ground water resources for potable/nonpotable sources
4. Identification of potential impacts to water resources
5. Evaluation of the water infrastructure capabilities
6. Collection/analysis of data and studies related to future demand forecasts, including additional studies to define the impacts on streams due to water withdrawal
7. Development of forecasts for public/private water usage (per CWRM water use categories) on Maui Island
8. Identification and prioritization of surface and groundwater development options, and alternative water sources

9. Identification and integration of resource development strategies
10. Identification of the impacts of climate change on water resource supply and consumption demands
11. Implementation of conservation and demand side management programs
12. Identify conceptual water system upgrades

Stage III. Identify and Prioritize Options and Strategies

Key to the successful completion of this stage is to integrate the data, analyses and other information collected in the previous stages related to existing and future water use demand. Integrated resource planning is a critical component of this stage. Tradeoffs will need to be made among conflicting and competing planning objectives and strategies in order to feasibly address a range of planning scenarios to address existing and future water demands.

Planning Options and Strategies will be identified and prioritized by:

1. Identify planning objective conflicts
2. Analyze potential tradeoffs between competing planning objectives
3. Develop suitable strategies to address the diversity of the planning objectives

Stage IV. Integrate the State Water Projects Plan and the Agricultural Water Use and Development Plan. Develop and implement consistency between the Maui Water Use Development Plan and appropriate State and Federal regulations, policies and plans.

The Maui WUDP will incorporate the State Water Projects Plan and the Agricultural WUDP. Consistency will be achieved with the State Water Code, Administrative Rules and the two other components of the Hawaii Water Plan including the Hawaii Water Resources Plan and the State Water Quality Plan. Ensuring consistency with the Hawaiian Homelands Water Plan will be accomplished through the inclusion of preliminary findings from the update of the State Water Projects Plan. Additionally, through the public outreach process, the Maui Islands WUDP will address and integrate as appropriate planning issues, water use, existing and future demands as raised by the Department of Hawaiian Homelands.

V. Public/Stakeholder Process and Public Information Program

Consistent, diverse and credible stakeholder involvement is critical to the success of the County WUDP. Using a diverse approach, the DWS plans to utilize a variety of outreach media to inform and engage the public including informational meetings, AKAKU local television programming, the County web site, fact sheets and other printed materials. The public meetings will provide a forum to solicit input on water resource issues, and also to gather comments on the development of the WUDP. Key stakeholders representing various landowners, the Department of Hawaiian Homelands, community and civic organizations, will be invited as active reviewers as the plan develops. After the revised project description approval by CWRM, a project “kick off” presentation will be given to the Maui County Council and the Board of Water Supply. The kick off meetings will also

take place for the public in five separate locations (Central, South, West Maui, Up Country, and East Maui). Public informational meetings will be held to also inform the public of the WUDP update commencement process. In addition to the regularly scheduled public meetings to be held throughout the development of the WUDP, the public will also have opportunity to offer their input at all of the scheduled Maui County Council Water Resources Committee meetings,

V. Updating and Adoption Process

CWRM approval of the revised Project Description initiates the process to update the 1990 WUDP and notifies the CWRM of the County's intent and proposed technical approach. Periodic milestone briefings to the CWRM will be conducted throughout the preparation of the WUDP. The completed Maui WUDP will be submitted to the Maui County Council Water Resources Committee and the Maui County Board of Water Supply for their review regularly throughout the development of the WUDP. The Maui County Council will review the WUDP and offer public comment during the proceedings. Upon Maui County Council approval, the Maui Island WUDP will be submitted to CWRM for review and adoption.

<i>WUDP Element</i>	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14
Development of forecasts for public/private system water usage for water use categories																														
Identification & prioritization of surface and groundwater resource development options & alternative water sources																														
Identify/integrate water resource development strategies																														
Identify potential impacts of climate change on water resource supply and consumption demands																														
Develop and implement conservation and demand side management programs																														
Identify conceptual water system upgrades																														
Stage III Identify and Prioritize Options & Strategies																														
Identify planning objective conflicts																														
Analyze tradeoffs between competing planning objectives																														
Develop suitable strategies for a range of specified planning scenarios																														
Stage IV Integrate State Documents from HI Water Plan																														
Incorporate updates from State Water Projects Plan (DHHL water plan findings)																														

WUDP Element	Jul-12	Aug-12	Sep-12	Oct-12	Nov-12	Dec-12	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Jan-14	Feb-14	Mar-14	Apr-14	May-14	Jun-14	Jul-14	Aug-14	Sep-14	Oct-14	Nov-14	Dec-14	
Integrate Ag. WUDP																															
Review and incorporate consistency between Maui Island WUDP and appropriate state regulations, policies and plans (e.g. State Water Quality and Water Resource Plans)																															
Provide drafts to be reviewed by state counterparts to ensure consistency																															
Stage IV Prepare Maui Island Water Use Development Plan document																															
DRAFT 1 COMPLETE											*																				
Drafts out for review to:																															
DWS leadership																															
Maui Water Resources Committee																															
Maui County Board of Water Supply																															
Public Comment																															
CWRM Briefing																															
Edits/revisions																															
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Drafts out for review to:																															
DWS leadership																															
Maui Water Resources Committee																															
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Maui Water Resources Committee																												
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Maui County Board of Water Supply																												
Public Comment																												
CWRM Briefing																												
Edits/revisions																												
Stage V REVIEW/APPROVAL PROCESS																												
Maui County Water Resources Committee Briefings																												
Maui County Board of Water Supply																												
Public Input/Review																												
Briefings with CWRM																												
Maui County Council Approval																												

2015 – 2017 STAKEHOLDER MEETINGS

7/15/15 Maui Alliance of Community Associations

12/15/15 Kickoff WUDP Stakeholders

1/26/16 2nd Stakeholders Meeting

3/4/16 Aha Moku o Maui

4/6/16 Diversified Agriculture

4/28/16 Agricultural Working Group

5/12/16 Kula/Honua`ula Moku

6/9/16 Realtors

2/21/17 Aha Moku O Maui Water Committee (no participants)

(9)

2016 – 2017 OPEN PUBLIC MEETINGS AND WORKSHOPS

3/10/16 Central Maui

3/17/16 West Maui

3/21/16 Upcountry

4/19/16 East Maui

4/23/16 Upcountry

4/30/16 Central Maui

5/7/16 West Maui

5/21/16 East Maui

10/22/16 Kaupo

11/17/16 East Maui

11/28/16 West Maui

11/29/16 Central Maui

11/30/16 Upcountry

(13)

2016 – 2018 16 POLICY BODY MEETINGS

1/27/16 WRC

5/19/16 CWRM

6/16/16 BWS

7/13/16 WRC

1/19/17 BWS

3/1/17 CWRM

4/6/17 Cultural Resources Commission

4/17/17 Cultural Resources Commission

6/15/17 BWS

6/20/17 CWRM

9/21/17 BWS

11/16/17 BWS

12/21/17 BWS

1/18/18 BWS

5/15/18 CWRM

5/17/18 BWS

8/10/18 Final Draft to BWS

(17)

11/29 – 12/6 2018: BWS PUBLIC HEARINGS

Lahaina

Upcountry

East Maui

Central Maui

South Maui

(5)

1/22/19 Board of Water Supply recommends approval of Draft Plan

3/22/19 DWS transmits Draft Plan to Maui County Council

PRE SUBMITTAL OF DRAFT WUDP BILL FOR AN ORDINANCE TO COUNTY COUNCIL 3/22/2019: (44)

2019 – 2020 COUNCIL COMMITTEE MEETINGS

8/19/19 WAI: Part I - Chapters 1 – 9. WAI **extended** deadline to adopt the proposed update by ordinance within 180 days to December 31, 2020. 1st RESO 19-513

9/30/19 Part II – Chapters 10 - 13

1/6/20 WAI/WIT: Part III – Chapter 14

1/22/20 Part III – Chapter 15 – 16

5/18/20 Recap and summary of WAI/WIT review to date

6/1/20 Part III- Chapter 17 – 18

6/15/20 Part III – Chapter 19

7/13/20 Review of Addendum to provide updates on relevant developments and decisions that have occurred since 2018 Board review. Revisions requested adding page number references and summary of groundwater pumpage

8/4/20 Review of revised Addendum. Recommended passage of the proposed bill on first reading. One requested revision to add Maui Tomorrow Foundation Inc. reference in Chapter 14 Addendum.

11/16/20 Joint WIT EACP

2nd RESO 20-175 **extend** to 6/30/21

(10)

2019 – 2020 NON-COUNCIL MEETINGS

8/20/19 West Maui Community Plan Advisory Committee

8/20/20 Board of Water Supply briefing

9/1/20 Board of Water Supply briefing

9/24/20 Haiku Community Association

(4)

COUNCIL AGRICULTURE & PUBLIC TRUST COMMITTEE 2021 - 2022

2/16/21 3rd RESO 21-25 **extend** to 9/30/21

3/2/21

6/1/21

6/29/21

7/20/21

7/27/21

8/3/21 4th RESO 21-126 **extend** to 12/31/21

8/17/21

8/31/21

9/14/21

9/28/21

11/3/21

11/16/21

11/30/21

December 5th **extension** to 2/4/22

1/4/22 APT

(15)

1/21/22 Council 1st reading

2/4/22 Council 2nd reading

(2)

TOTAL MEETINGS ON THE WUDP THROUGH 2/4/22: 75

EXHIBIT 4

Public testimony received through
the public hearing process

Maui Island Water Use and Development Plan
Oral testimony received at 9/21/22 public hearing

	COMMENT	Maui WUDP Revision?
1	My question to CWRM is now that the Lahaina area is under the designation. We still need water now for the residents that live there. There is the private developers that put in more existing uses as we speak. They took my private water. We need to look at the dialogue implemented. There is a lot of inaccuracies. Ahamoku of Maui basically was and has major concerns. Submit the plan where it needs to go.	Yes
2	We are not in favor of it now. Lahaina has been designated. Lahaina is the hottest place in Maui. We don't have that much water on that side. The hotels need to think about pushing back on their water, cuz we need it more. They need to set back the lawns, the golf courses, no more swimming pools on private properties. We do not need more swimming pools. Lawns need to be watered at night. You should get fined. These laws need to be implemented and I don't see it.	Yes
3	This plan should not be passed! That's not your Kuleana. You need to hire a consultant who knows what they are doing. To you I say do not pass this plan! Residents do need to come first!	Yes
4	The water plan is out of date, the community plan is 30 years out of date! They put in hours and hours and hours! Right now in Ha'ikū the rain has changed, the climate has changed, the water moves differently down the mountain! Now that we are in drought we don't know how it moves underground. I'm against this plan.	Yes
5	It would be great to put it on your website. We are supposed to be the wet side and its not wet anymore! We should start with that actual use then we have to start what is needed for the future. The numbers are way off!	Yes
6	I wish that more people came out tonight. I'm a third generation water activist. Just because I have my river back doesn't mean that others should go without it. . The resorts need to take a break! Everyone here has children that live here. You'll be standing here crying and pleading. It goes farther than just data and paychecks. It's a sustainable part of us living as humans.	Yes
7	I'm really curious. I don't have access to internet. I live in Kohula. Data. We do need it. I appreciate the people who are learning to collect data. We want data. We have people running for office who don't care! I testified choke times in between. I came with my kupuna, who over 20 years ago were standing in my place doing the same thing. I'm not trying to disrespect. Acknowledge the Kupuna, the Kapus!	Yes

Maui Island Water Use and Development Plan
Oral testimony received at 9/21/22 public hearing

	COMMENT	Maui WUDP Revision?
8	We need real data. Its not true, these estimates. I come from Wailuku and I have rights to have water as a Kanaka. They do not have rights to give water to hotels... that do not involve our people. Why do we intend to expand the uses of water usage (hotels). Our kalo growers are not given that expansion. I almost never cut my grass for one year cuz never need. Those things need to be addressed. Don't give us a junk plan.	Yes
9	I'm an engineering major. I'm 25% Hawaiian. The first thing you brought up was the hydrologic cycle. The east is getting more water. But as a Kalo grower in Ha'ikū that not true at all. The overall system of our earth is increasing in temperature. There is thing called vapor pressure, from gas to liquid, as the temp increases the vapor pressure also increases. When you look at these things... its not true... I know math. Its not pono. Obviously our condensation rate is not increasing. Thanks for East Maui irrigation, it has to go thru concrete, so obviously our aquifers are getting lower and lower!	Yes
10	The whole presentation wasn't laid out in a way I could understand. Its hard to hear, its hard to understand, the presentation doesn't match the presentation. People can't understand what is being said here! The land use plan that is being prioritized is based on... I don't understand... we prioritize a plan... the water was designed to go to the place where it was meant to be green... its short term thinking. As our water supply diminishes what are we going to do? We have to live with these complicated plans we don't even understand!	Yes
11	No one can read this! No one's going to want to understand to read this! When they start to do something when they need water can we be included in the conversation then! Not later! We were there rewriting it as the council passed it. They would say we are basing this plan on the land use growth. I heard Hāna has a water authority. I want a water authority. Water for kanaka is supposed to be a superior right! Why are we basing it on land use! There are a lot of us not comfortable with this plan. We pay for it. We did! It has not changed. I suppose if Hawaiians get an authority, we should get an authority, I'm talking about areas, not everybody is the same...	Yes
12	. There wasn't enough notice for this meeting. I'm a water scientist. My eyes glazed over! It needs to be a more readable report! The main thing that bothers me is that it is demand driven. It needs to be supply driven. Max build out. Here's how much water it will take. What is our priority. Growing for people who live here. You need to use water for that and then something else. When you get that ownership, that engagement, that is when we will truly manage it well.	Yes

Maui Island Water Use and Development Plan
Oral testimony received at 9/21/22 public hearing

	COMMENT	Maui WUDP Revision?
13	I work in Pā'ia school as a teacher. These kids will be 20-30 when this plan is planned out. I came because of them. Water is the new gold. Water is life. We have to understand this! In the 1990's they hired a consultant! Fair enough. Make it easy for people to understand them so that we can know that this data is true.	Yes
14	We don't have enough water for us... our people... I want enough water for her (my kid). That's why there is a bunch of brush fires everywhere... If there is water for our people... it should be given back to us for our land...Her name is Kawai Lani. She was born in the water.	No
15	1. Many years ago a study was told to me... if you took all the water from the gulch you would have enough water to feed the sugar plantations. Rob Parsens did that study it should be looked at. 2. Why water in the not morning and at night? At night time plants are dormant. Water in the morning. 3. Kihei was using R-1 water for the golf courses, but now the effluent is going into the ocean. If that was used for AG uses instead of infections it could transform it.	No
16	Been living in Wailuku side for 21 years... a really nice stream that runs down our property... its totally dry... when I keep going back there it just keeps breaking my heart. We need to get out there and protect our environment for our children. Thank you.	No

David Goode

RE: COMMENTS ON MAUI ISLAND WATER USE AND DEVELOPMENT PLAN UPDATE

October 31, 2022

Aloha Chair Case and Members of the Commission:

I am submitting comments in favor of the Commission approving and adopting the County of Maui's Water Use and Development Plan (WUDP) for inclusion into the State's Water Plan.

By way of background, I live Upcountry and am a former director of the County of Maui's Department of Public Works (DPW) and also a former Board of Land and Natural Resources at-large member. I understand and appreciate the tremendous amount of work needed to put together a WUDP and have it passed *unanimously* by the County Council.

To pass a plan of this magnitude unanimously means that the plan has been well vetted by the entire community and certainly some compromises had to be made by all stakeholders.

No island wide plan is perfect, nor does it have perfect information – but it can always be updated over time to adjust to factors that affect water source or changing demand. I have seen this occur with traffic and drainage plans within DPW, for example.

From what I understand, the WUDP meets all the criteria of CWRM and State law, is decades in the making and should be approved by the Commission.

A small number of Maui residents who don't like the council adopted WUDP may be testifying against CWRM adoption, but the vast majority of people are not because they support the Council's diligent efforts. Those that are before CWRM asking to not approve the WUDP are being orchestrated by a handful of folks that asked for certain provisions in the WUDP, and that after due deliberation by the County Council, such provisions were not inserted into the WUDP. It should not be the job of CWRM to nitpick the County's plan, or if it is readable or too long, or needs a consultant, or needs to wait to see if a water authority is organized; rather CWRM needs to examine if the County did the job it was supposed to do (it did) and if the plan meets State law (it does).

Please incorporate the County's WUDP into the State Water Plan and let's move forward as a community and help the Department of Water Supply meet the needs of our island community while protecting public health, safety, welfare, and the environment.

Sincerely,



David Goode

**Testimony to the Commission on Water Resource Management (CWRM)
regarding the Maui Island Water Use and Development Plan (WUDP)**

To account for the 6 items BELOW, I request that the Commission on Water Resource Management:
#1 Postpone the decision to accept the proposed Maui Island WUDP until these important issues have been resolved; and
#2 Utilize an independant Consulting Firm to prepare a clearer and more accurate WUDP that accounts for the items below.

	CONCERN	EXPLANATION and RATIONALE FOR DELAYING WUDP ACCEPTANCE
1	Charter amendment election may result in creation of County water authorities.	Maui County voters will be deciding in the November election whether to approve a County Charter amendment to establish a Water Authority capability for Maui County to manage Maui's multiple water systems (East Maui, Na Wai Eha, West Maui, Molokai). The present proposed plan does not consider Water Authorities.
2	Need to determine to whom the DLNR Board will give the 4 East Maui water leases.	The major source of water on Maui is the East Maui watershed. Until we know to whom the DLNR will be giving the the leases for the four state areas, it will be unclear as to who will control Maui's major source of water. It could be a private company (A&B); a foreign pension fund (Canadian PSP); or it could be the County. Whomever it is will probably act differently and the WUDP must be in sync with the new leaseholder.
3	Need to know the conditions that DLNR will impose on the recipient of the East Maui water leases.	In addition to granting 4 leases, DLNR will be imposing a number of conditions on the lease(s). Conditions may range from describing the fees that need to be paid to the State as well as the fees paid by consumers (DWS or Mahi Pono). There may also be conditions on watershed management, descriptions of the operations of the irrigation system, and even on the uses of the water from the watershed. Those conditions will greatly impact the East Maui area and UpCountry Maui residents, and Central Maui agricultural operations.
4	The lack of a comprehensive WUDP prioritization list of future water projects.	It should be made much clearer as to what a projects will need to be constructed, the timeline to construct them, the original construction costs, and the annual maintenance fees. Knowing those elements will necessary to determine the needed revenues and subsequently the annual effect on water consumers of a changed water rate structure.
5	Compliance with the Maui Island Plan may significantly impact water development and use.	The Maui Island Plan makes specific statements regarding the future course of development on the island. Examples that may affect the WUDP are the statements regarding limiting the future growth of the tourist industry. The plan needs to better acknowledge the Maui Island Plan which is a legally required set of prescriptions to decide Maui's future.
6	A&B's Final EIS may need to be modified, if some of the items mentioned above change the basis for that environmental document	A&B's final EIS for East Maui water may have to be significantly altered depending on the granting of the leases and the conditions that will be imposed by DLNR on the leaseholder.

FW: [EXTERNAL] Water plan.

DLNR.CW.DLNRWORM <dlnr.cwrw@hawaii.gov>

Tue 9/20/2022 8:03 AM

-----Original Message-----

From: Claudia Imperato <[REDACTED]>
Sent: Monday, September 19, 2022 9:36 PM
To: DLNR.CW.DLNRWORM <dlnr.cwrw@hawaii.gov>
Subject: [EXTERNAL] Water plan.

This plan is NOT ready to approve! Please take more time and please steward the water use in the most thoughtful and responsible way you can imagine.

Thank you,
Claudia

Mahalo, from my iPhone.

State Commission on Water Resource Management, DLNR
1151 Punchbowl St., Room 227
Honolulu, HI 96813

STATE COMMISSION ON WATER
RESOURCE MANAGEMENT
2022 OCT -5 AM 1:56

Re: Hawaii Water Plan Public Hearing

September 28, 2022

Dear Commissioners:

I am a South Maui resident, I served on the Maui Planning Commission from 2002 to 2005, and am currently on the Sierra Club, Maui Group, Executive Committee.

I attended the public hearing on the Maui Island Water Use and Development Plan on September 21, 2022, and have several concerns. While I appreciate the amount of work that has gone into the plan, it appears to be based on outdated data. As an example, per capita consumption is from 1990 to 2014; the rate of population growth and visitor numbers on Maui has increased during that time, and continues to do so. A further example of outdated figures is the aquifer sustainable yield from 2008.

The speakers at the meeting from the Water Department and Mr. Sinenci recognized that climate change was a factor in the deliberations, however, climate change is happening much faster than anticipated. To base a plan on data from past decades cannot be accurate. Consider that the Mauna Loa station carbon dioxide levels, which were at 313 ppm in 1958 when measurements began, have gone from 400 ppm in September 2014 to 420 ppm in September 2022. Even in South Maui we see extreme weather effects with continued drought yet two flooding episodes within a year.

Another consequence of climate change that must be considered is sea level raising the water table, leading to groundwater inundation and aquifer salinization.

Maui County should engage a water specialist consultant to streamline the 1300 page document, to incorporate current data, and to fully account for climate change.

Thank you,



Diane Shepherd



Hawaii Water Plan
Maui Island Water Use and Development Plan
Public Hearing
Written Comments

Please provide any comments you wish to offer on the public review draft of the plan

Document: _____

Public Hearing Location: KEHEI COMMUNITY CENTER

As ^{A KULĀNA LAND} ~~THE~~ OWNER IN THE KO'OLAU AQUIFER SECTOR,
I NOTICED 37.9 MGD WERE BEING EXPORTED —
9.4 MGD ~~FROM~~ ~~FROM~~ FROM GROUNDS
WATER & 28.5 MGD FROM SURFACE WATER.
As AN ENGINEERING MAJOR IN COLLEGE, &
ONE STUDYING SUSTAINABLE SCIENCE MANAGEMENT —
I HAVE LOOKED & ANALYZED THE STATISTICS
AND IT IS CLEAR TO SEE THE CURRENT
TREND IS NOT SUSTAINABLE (DRAINING 133 ~~FEET~~ +
FEET FROM THE ^{FRESHWATER} ~~RESOURCES~~ ON AVERAGE PER
DECADE — WHICH EFFECTS THE CONDENSATION/
PRECIPITATION LEVELS NEGATIVELY). WHY ARE STREAMS
& AQUIFERS BEING DRAINED TO SUPPORT UNSUSTAINABLE
GOALS & PROJECTS IN CENTRAL MAUI — WHEN
WE ARE ALREADY IN A DRAUGHT & ACTIVELY
BEING EFFECTED & AFFECTED IN OUR "MOST MOIST CLIMATE".

(attach additional sheets as necessary)

PLEASE PRINT: Name: 'ALEHA MA'ALAEA

Organization (if applicable): _____

Address: _____

Please mail your comments to the State Commission on Water Resource
Management, postmarked by November 1, 2022

Hawaii Water Plan
Maui Island Water Use and Development Plan
Public Hearing
Written Comments

Please provide any comments you wish to offer on the public review draft of the plan

Document: Maui Water Use development Plan.

Public Hearing Location: Kihei Community Center

Will west maui population Increase 64% to 40,000 like the WUDP theorizes? is this sustainable, given the areas stressed out aquifer and drying Streams?

This WUDP estimates that hotels and Luxury resort Condos will add many more rooms and need 2 mpd from Private water systems over the next 15 years.

Now that Komohana has gotten designated a ground & surface management area we still need Information on whether the existing Infrastructure has adequate water for residences now because of what is happening now on the now Instream Flow Standards are still fluctuating and are not gathering the right data. The amount of Pipes now being Put in without adequate permitting, west maui is like the wild wild west. The WUDP should not be granted and be looked at with a fine tooth comb.

(attach additional sheets as necessary)

PLEASE PRINT: Name: Keleamoku Kapu

Phone: 

Organization (if applicable): Aha moku o Maui Inc.

Address: 

Please mail your comments to the State Commission on Water Resource Management, postmarked by November 1, 2022

From: DLNR.CW.DLNR.CWRM
To: [REDACTED]
Subject: [REDACTED]
Date: Thursday, September 22, 2022 1:50:42 PM

From: Kaniloa Kamaunu <[REDACTED]>
Sent: Thursday, September 22, 2022 9:36 AM
To: DLNR.CW.DLNR.CWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL]

I Kaniloa Kamaunu am the 7th generation Kuleana heir of Waihee Valley. Recognized lineal descendant of LCA title holders Piimaiwaa, Kekahuna, Maikaaloa. I claim all my sovereign rights of Aina, Wai, Kai as a Kanaka Maoli subject of Ko Hawaii Pae Aina the Hawaii Kingdom as constituted in 1840. Recognizing in our Kanawai that I have vested rights to above mentioned resources. I do not claim the slave term known as Native Hawaiian as determined in 42 United States Code subsection 11701 which attempts to illegally change my ethnicity to be an American which is in violation of the 1959 Hawaii Admissions Act Subsection 19. Which states clearly that America doesn't possess the authority to change my ethnicity.

The Commission on Water Resource Management (CWRM) several years ago during the Na Wai Eha case verbally recognized me as having SUPERIOR RIGHTS to water. This transpired at the Monroe House located at the Kamehameha golf course in Waikapu here on Maui.

I Kaniloa Kamaunu then invoke my authority as a Kanaka Maoli and lineal descendant of Waihee recognized superior vested rights holder of water prohibit CWRM from accepting the County of Maui's Water Use and Development Plan.

1. The plan being proposed fails to properly recognize my superior rights in water by having it mentioned as Appendix 10. Placing 9 other peoples or items as having a higher priority or importance.
2. Fails to show where the State of Hawaii's water interest was acquired from the kingdom in writing.
3. Being the State of Hawaii fails to validate their water interest claims then the County of Maui has no claim or authority.
4. Fails to show strategies for recharge or replenishment to the aquifer or stream.
5. Fails to address other strategies for alternative water resources.
6. Fails to show plans or strategy for low rainfall and climate change.

With this and many other failures and flaws in this proposal the CWRM has an obligation to protect my recognized superior right against ill conceived, incompetent and possible injurious acts.

Kaniloa Kamaunu
Kuleana Heir of Waihee

From: [DLNR.CW.DLNR.CWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] "Maui Island Water Use and Development Plan (MIWUDP)"
Date: Thursday, September 22, 2022 8:47:58 AM

From: Susanna SeaFire [REDACTED]
Sent: Tuesday, September 20, 2022 2:27 PM
To: DLNR.CW.DLNR.CWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] "Maui Island Water Use and Development Plan (MIWUDP)"

I urge the commission to revise not approve the current plan because:

People can't understand what the Water Plan says.

- It has over 1,200 pages filled with confusing charts, lots of jargon, and old data.

We need a professional consultant to make the Plan useful and update the numbers.

- Our Water Department worked hard on this plan, but it's not really in their job description. The Water Commission should ask the County to hire a professional consultant to streamline it, make the plan clear, and update the data—as the other islands have done.

The Plan is missing any reference to potential Community Water Authorities.

- The WUDP should not be approved until we know if the Community Water Authorities charter amendment will pass. It would be a big part of future water strategies for all parts of Maui. Nor does the WUDP include the recent designation of the Lahaina Aquifer Sector as a Surface Water and Ground Water Management Area.

The Plan needs to aim for larger water conservation goals.

- Water Conservation goals of 8% per capita in the WUDP are too low. With increased periods of drought and less rainfall predicted for many areas, water conservation goals need to aim higher.

We need a WUDP with real solutions for the Upcountry meter list—it has been 20 years!

- The Upcountry meter list section of the WUDP uses old numbers & doesn't provide any real breakdowns of water demand or specific solutions. The current Upcountry list is 1,428—the WUDP still says there are 1,800 requests and that 7 mgd of water is needed. What is the real number? The WUDP "solution" language says: "Assess alternative options to restructure and process the existing Upcountry Meter Priority List...." Why hasn't this been done over the last decade?

The WUDP needs to re-examine water "demand" numbers. The Plan uses old data and times have changed.

- The WUDP uses old data, even when newer numbers are available. This boosts estimated water needs, but the numbers may be inaccurate. We need a plan with the best data available in the face of the uncertainties posed by climate change.

The Ha'ikū aquifer is the main source for new county water wells—but the WUDP ignores

Ha'ikū-Pā'ia community plan.

- Ha'ikū residents have had NO access to new county water meters for 20 years or more and must catch rainwater or drill expensive wells. Ha'ikū's community plan asks that the water needs of the community be met before water is transported elsewhere. County staff refused to include Ha'ikū-Pā'ia community plan language in WUDP strategies.
- Ha'ikū wells are the County's main solution for providing 8 mgd of water to South Maui, but the plan does not acknowledge how very little is known about the aquifer and its specific capacity and depth. There is no clear plan "B."

West Maui water demand projections seem inflated.

- Will West Maui's population really increase 64% to 40,000 as the WUDP theorizes, boosting water demand from 9.4 mgd today to 15.7 mgd in 15 years? Is this sustainable, given the area's stressed aquifers and drying streams?
- The WUDP estimates that hotels and luxury resort condos will add many more rooms and will need an additional 2 mgd from private water systems over the next 15 years. Our County Council has proposed limiting new resort units in West Maui to what exists now. Should the WUDP use this outmoded Lāhainā demand for resort/business water needs if few new visitor units are planned?
- Will there be enough water for homes that existing Lāhainā families can afford? Does the WUDP figure in the existing Lāhainā residents who need homes, who are not "new" population?

Mahalo
Susanna

From: [DLNR.CW.DLNRCWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] 4 rivers URGENT consideration for Maui Island Water Use and Development Plan (MIWUDP)
Date: Thursday, September 22, 2022 1:51:33 PM

From: Jeffrey Retailer [REDACTED]
Sent: Tuesday, September 20, 2022 8:25 AM
To: DLNR.CW.DLNRCWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] 4 rivers URGENT consideration for Maui Island Water Use and Development Plan (MIWUDP)

Maui Island Water Use and Development Plan (MIWUDP)

I given my opinion to reconsider reactivating the 4 great waters thru Waikapu. Additionally I am willing to invest time money and resources to restoring the natural and sustainable flow for decades to come.

Nā Wai 'Ehā—"The Four Great Waters" of Waihe'e, 'Īao (traditionally Wailuku), Waiehu, and Waikapū) are a public trust; but since the sugar plantation era, various companies drained them dry for private profit. The EMI currently has amply good fresh drinking water. Let's protect and manage this asset for today and tomorrow

Jeffrey Bisk
Executive Director
Land Development Services

Gave Testimony Needed THIS TUESDAY to Create an East Maui Water Authority

Nā Wai 'Ehā—"The Four Great Waters" of Waihe'e, 'Īao (traditionally Wailuku), Waiehu, and Waikapū) are a public trust; but since the sugar plantation era, various companies drained them dry for private profit. The EMI currently has amply good fresh drinking water. Let's protect and manage this asset for today and tomorrow

From: Maui Tomorrow Foundation <Info@maui-tomorrow.org>
Date: June 6, 2022 at 1:30:54 AM EDT
To:
Subject: **URGENT: Testimony Needed THIS TUESDAY to Create an East Maui Water Authority**
Reply-To: Maui Tomorrow Foundation <Info@maui-tomorrow.org>



Dear Friends,

This coming Tuesday, Maui has a chance to move toward achieving greater control over our own water security. The Maui County Council's Government Relations, Transparency and Ethics (GREAT) committee will meet at 9 am on June 7th to make an important decision: whether to approve a resolution for a charter amendment to establish an East Maui Community Water Authority.

Currently, public water supplies are dependent on corporate entities, some of which are foreign owned. This places the public at the mercy of corporate decisions that are based on what's best for the company – not necessarily the public interest.

It's a risky situation, too. As climate change continues, investment in watershed health will be critical in preserving any stream flow at all. If the company is sold, like it was in 2018, we will have a whole new period of uncertainty while we wait and hope that the new owner will have our best interest in mind.

That said, it's important to note that water for large scale agricultural users can continue to be provided while prioritizing instream uses such as kalo growing. The advantage of a public water management entity would be that

decisions would be made transparently and consistent with the public trust, rather than behind closed doors based on what's best for the corporation.

If approved by the GREAT committee, and then by the County Council, the charter amendment proposal will appear on the general election ballot in November.

Please let the GREAT committee know that you support the proposed charter amendment for the establishment of the East Maui Community Water Authority – Maui County's people deserve a chance to learn more about the proposal and then VOTE!

Government Relations, Ethics, and Transparency Committee

Meeting Time: Tuesday, June 07, 2022 at 9:00am HST

Online Testimony Link: <https://bluejeans.com/175115369>

You can also submit written testimony here, or simply indicate
“support” and leave a brief comment.

The establishment of this community Water Authority is an important step towards restoring community-based management of our resources and bringing stewardship back into the hands of the people of Maui.

The Water Authority would be run by a community advisory board, with representatives from East Maui communities, Upcountry agriculture, Upcountry residents, and the Department of Hawaiian Homelands – all of whom are important stakeholders that rely on this water source.

As a public entity, the Water Authority would be eligible for private, federal, and state funding that is not available to private corporations. Funding could

be used for watershed restoration and much needed repairs to the century old infrastructure of the East Maui Irrigation system. EMI workers, who know the system best, could continue to provide expertise and run the system under the management of the Water Authority.

Unless we take action, A&B/EMI (co-owned by Mahi Pono) is on track to secure a long-term lease to divert up to 88 million gallons a day from East Maui streams for the next 30 years. Mahi Pono is owned and controlled by one of Canada's largest investment firms, Public Sector Pension Investment Board (PSP), which has already invested in the privatization of water rights in other drought prone areas of the world, and is under global scrutiny for its investment management practices.

Decisions made now will affect water security for all of us - now and in the future.

We need an alternative kama'āina plan, not a corporate plan. A Water Authority has the potential to give everyone a seat at the table to work out water policies that make sense in the face of uncertain rainfall patterns

Let's help Maui County work toward pono resource management. Please let the GREAT committee know you support the proposed charter amendment for the establishment of an East Maui Community Water Authority, and allow Maui residents a chance to vote on it!

Mahalo for Protecting Maui's Future!



From: [DLNR.CW.DLNR.CWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Comments for Maui Island Water Plan
Date: Thursday, September 22, 2022 8:53:52 AM

From: Ann Pitcaithley [REDACTED]
Sent: Tuesday, September 20, 2022 3:06 PM
To: DLNR.CW.DLNR.CWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] Comments for Maui Island Water Plan

The issues surrounding water resources are extremely complex

There is a desperate need a Professional consultant to make the plan useful and update the numbers

~ It is not the role or responsibility for Maui County Water Department to create the plan, which is why the Water should ask the County to hire a professional consultant to streamline it, make the plan clear, and update data .

The WUDP has no business approving a plan until the status of the Maui County Charter amendment Water Authority passes.. Nor does the WUDP include the recent designation of the Lahaina Aquifer Sector as a Surface Water and Ground Water Management Area.

Water Conservation goals of 8% per capita in the WUDP are too low. With increased periods of drought and less rainfall predicted for many areas, water conservation goals need to aim higher.

The WUDP lacks solutions to the Upcountry meter list - it's been 20 years!
~ The Upcountry meter list section of the WUDP uses old numbers & doesn't provide any real breakdowns of water demand or specific solutions. The current Upcountry list is 1,428 – the WUDP still says there are 1,800 requests and that 7 mgd of water is needed. *What is the real number?* The WUDP “solution” language says: “Assess alternative options to restructure and process the existing Upcountry Meter Priority List....” – Why hasn't this been done over the last decade?

The WUDP uses outdated water “demand” numbers when new numbers are available.

This boosts estimated water needs, but the numbers may be inaccurate. We need a plan with the best data available in the face of the uncertainties posed by climate change.

The Ha'ikū aquifer is the main source for new county water wells - but the WUDP ignores Ha'ikū - Pā'ia community plan.

~ Ha'ikū residents have had NO access to new county water meters for 20 years or more and must catch rainwater or drill expensive wells. Ha'ikū's community plan asks that the water needs of the community be met before water is transported elsewhere. County staff refused to include Ha'ikū - Pā'ia community plan language in WUDP strategies.

~ Ha'ikū wells are the County's main solution for providing 8 mgd of water to South Maui, but the plan does not acknowledge how very little is known about the aquifer and its specific capacity and depth. There is no clear plan "B."

West Maui water demand projections seem inflated

~ Will West Maui's population really increase 64% to 40,000 as the WUDP theorizes, boosting water demand from 9.4 mgd today to 15.7 mgd in 15 years? Is this sustainable, given the area's stressed aquifers and drying streams?

~ The WUDP estimates that hotels and luxury resort condos will add many more rooms and will need an additional 2 mgd from private water systems over the next 15 years. Our County Council has proposed limiting new resort units in West Maui to what exists now. Should the WUDP use this outmoded Lahaina demand for resort/business water needs if few new visitor units are planned?

~ Will there be enough water for homes that existing Lahaina families can afford? Does the WUDP figure in the existing Lahaina residents who need homes, who are not "new" population?

Thank you, Ann Pitcaithley, Maui

From: [DLNR.CW.DLNRCWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Fwd: Maui Island Water Use and Development Plan (MIWUDP)
Date: Thursday, September 22, 2022 8:55:36 AM

From: William Greenleaf [REDACTED]
Sent: Wednesday, September 21, 2022 3:28 PM
To: DLNR.CW.DLNRCWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] Fwd: Maui Island Water Use and Development Plan (MIWUDP)

Begin forwarded message:

From: William Greenleaf [REDACTED]
Subject: Maui Island Water Use and Development Plan (MIWUDP)
Date: September 21, 2022 at 3:25:27 PM HST
To: dlnr.cwrn@hawaii.gov
Reply-To: Maui Island Water Use and Development Plan

Aloha Chair:

I'm asking for this plan to be deferred and developed in a manner that provides accuracy and respects the local culture (Haiku Community Plan)

The 1200 page plan needs simplification and revision.

The numbers in the tables are not the most recent numbers...if you check them, you'll see and that's a red flag about the entire plan.

Haiku Community Plan is being ignored...that's disrespectful and could lead to a lawsuit.

Water Conservation is not a big enough part of the plan. 10 of the biggest waster users on in the Central Maui Water District...Hotels across Hawaii (except Maui) are required to use much less water than unlimited...Hotels on Maui need to be included in the plan...they can plant drought tolerant plants, publicize their efforts so that guests will feel cultural needs are being respected...Respect breeds respect.

Maui's Water Dept wrote this plan...they may not be capable...this is the

same Dept that has been told by AgWorkingGroup that MauiCounty can use Gen Obligation bonds to build water storage and to improve WaterShed and delivery system...In my 22 years here, they have ignored their Kuleana and been a thorn in the side of local agriculture I understand Moloka'i is going to have a Consultant develop a Water Use Plan...this step needs to happen on Maui

Planet Earth has demonstrated the Climate is Changing in dangerous ways...droughts are now global...Maui is no exception. This plan does not consider what we are dealing with in Climate Change.

UpCountry Water list...this plan suggests: 'Assess alternative options to....' Why hasn't anything been done by Maui County Water Dept? More studies are not needed...Water Storage is needed..

The Haiku aquifer is the main source for new county water...Sharing is Aloha...this plan is not necessarily about sharing if the source can not accommodate local needs and what is taken...that becomes legalized stealing, not sharing..

Haiku has a much different water draining process than other areas on Maui...because of the amount of water historically falling on Haiku, the saturation in the ground causes water to move horizontally as it drains into the aquifer...this changes during drought and we don't have any studies to understand the true nature of how water moves underground in Haiku...Studies are needed as part of plan.

Why are we stealing water from Haiku to build more Hotels rooms? Are the numbers of past and future use accurate. (Hint, they are outdated)

I imagine this panel realizes many of these errors and oversights...I hope my testimony helps your decision to defer while planning to gather accurate information...

Mahalo,
Bill Greenleaf
Greenleaf Farm

Makawao

From: [DLNR.CW.DLNR.CWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Fwd: Testimony for MIWUDP
Date: Thursday, September 22, 2022 8:54:45 AM

From: Jade Smith [REDACTED]
Sent: Wednesday, September 21, 2022 8:49 AM
To: DLNR.CW.DLNR.CWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] Fwd: Testimony for MIWUDP

Commission on Water Resource Management
1151 Punchbowl Street, Room 227
Honolulu, Hawaii 96813
Telephone: 808-587-0214
Fax: 808-587-0219
Email: dlnr.cwrn@hawaii.gov

September 21, 2022

Maui Island Water Use and Development Plan (MIWUDP).

Aloha Commissioners,

I would like to applaud the work that has been put forth into the MIWUDP Plan. I've been involved for over 10 years and know it has its challenges. I would like to ask the Water Commission revise, not approve the current draft of the MIWUDP. This plan is NOT ready for approval as there are dire concerns for all uses of water on Maui. It needs more time to organize and clean out the old jargon and data causing confusion and unnecessary frustration. The 1200+ pages has old clutter, inaccuracies and needs to be better defined. It is very important that the next two decades will dictate our water usage so I recommend that the Water Commission ask the County of Maui to hire a professional consultant to streamline it, define it and insert current data. The County of Maui and the Water Resources made up of the public, businesses and organizations knows our Island better than the State. Therefore, we need our Water Authorities Charter to be amended first, as it will play a huge part of future water strategies for Maui Nui. I ask that you do not rush into our future as this plan will negatively impact our Island of Maui.

I understand that the WUDP does not include the recent designation of the Lahaina Aquifer Sector as a Surface Water and Ground Water Management Area. This is critical to our West Maui Sector to be included.

The MIWUDP needs to aim for larger water conservation goals. The Water Conservation goals of 8% are too low due to our increased droughts and less rainfall prediction. I live in Kaupo, Maui and understand drought issues with our cattle ranching and the residents.

Our 20 year old Upcountry Meter List needs real solutions to which we need WUDP to update the old numbers on the list and provide real breakdowns of water demand or, specific solutions. The current Upcountry list is 1,428-the WUDP still says there are 1,800 requests and that 7 mgd of water is needed. This causes confusion as data is incorrect. The WUDP "solution" language says: "Assess alternative options to restructure and process the existing Upcountry Meter Priority List..." To me this is frustrating because the past 20 years, nothing has been done. Why?

I would ask that the WUDP re-examine water “demand” numbers. Again, the Plan uses old data yet we have grown in population, businesses, farms and wealthy private needs. We need an accurate plan in water needs with the best data available for accurate numbers in the face of the uncertainties posed by climate change or a crack (s) to our aquifers by an earthquake or natural disaster.

The Haiku aquifer is the main source for new county water wells-but the WUDP ignores Ha’iku-Pa’ia community plan. The Haiku residents have had NO access to new county water meters for the past 20 years and need to catch rainwater or drill expensive wells. The Community Plan asks for water needs of the community be met before water is transported elsewhere. County staff refused to include Ha’iku-Pa’ia community plan language in WUDP strategies. Why is this so? These Haiku wells are the County’s main solution for providing 8 mid of water to South Maui, but the plan does not acknowledge how very little is known about the aquifer and its specific capacity and depth. There is no clear plan “B.”

As for the West Maui demand projections? The Projections seems inflated when the area’s aquifers are stressed and streams are drying up. Climate change will have an impact to these projections so what would be a Plan “B” should the water source be little or limited? The hotels and luxury resort condos will add on to additional water needs from private water systems. Maui Nui can only provide so much water for all water systems. I applaud the County of Maui Council to propose limiting new resort units in West Maui to what exists now. They are preventing and protecting the water resource usage for future needs. Please re-visit the WUDP outmoded Lahaina demand for water needs? Will their water be enough for future homes? This is where we need a Professional Consultant for Maui as ‘we’ know our Island and it’s needs.

In closing, I am haunted by the impact this Plan will cause for our housing issues here on Maui. I supported the C-1 Proposed Interim in stream flow standard for Huelo Streams and the Department of Hawaiian Home Lands Reservation, East Maui because it will assist in our housing needs. There isn’t any hotels involved in this area so theres no demand for competing for water. However, is there enough water for homes that existing Lahaina families can afford? Has the WUDP figure in the existing Lahaina residents who need homes, who are not “new” population?

There are many more concerns that needs to be reflected in the reality of our current times to show a clear and responsible plan for the next 20 years. Thank you for your time.

J. Alohalani Smith
Kaupo Resident

From: [DLNR.CW.DLNRCWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Haiku water
Date: Thursday, September 22, 2022 8:47:40 AM

-----Original Message-----

From: Jette

Sent: Tuesday, September 20, 2022 12:45 PM

To: DLNR.CW.DLNRCWRM <dlnr.cwrn@hawaii.gov>

Subject: [EXTERNAL] Haiku water

I find it outrageous to think of taking water from Haiku, when people out here have been waiting for 20 years or more to get water meters and sustain on water catchment, which in these climate changing times, is not reliable. Many people have wells, but us who don't, have recently been quoted \$150,000 for getting one. Little is known about the aquifer!

The Haiku community ask that their need gets met first!

We hope the Community Water Authority Charter amendment will pass! After that will be the time for consideration!

In hope for understanding,

Jette Slater

From: [DLNR.CW.DLNRCWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)
Date: Thursday, September 22, 2022 1:52:01 PM

-----Original Message-----

From: Bobbie Best
Sent: Tuesday, September 20, 2022 9:57 AM
To: DLNR.CW.DLNRCWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)

We need a professional consultant to make the Plan understandable and up to date.
It needs to include info and Community Water Authorities charter amendment and the Lahaina Aquifer Sector as a Surface Water and Ground Water Management Area.
Water Conservation Goals need to be higher than 8%.
Upcountry meter list is outdated and unclear, needing solutions to muddy statistics. The WUDP needs clear data.
Haiku aquifer and Haiku-Paia community plan need to be considered in the WUDP.
West Maui water demand needs to be adjusted.
This plan needs to be revised not approved as there are too many problems with it.

Mahalo
Bill and Bobbie Best

From: [DLNR.CW.DLNRWORM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)"
Date: Thursday, September 22, 2022 9:20:24 AM

From: Barbara Barry
Sent: Wednesday, September 21, 2022 5:09 PM
To: DLNR.CW.DLNRWORM <dlnr.cwrw@hawaii.gov>
Subject: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)"

Aloha Chair and Commissioners,

I'm sorry I'm unable to testify in person tonight. Very late notice for this meeting.

My name is Barbara Barry and I have been following this issue for quite some time. I applaud the hard work from the County Water Department. They have done their best but the Water Commission should be asking for an outside professional to finish this up by streamlining it and include all the areas the public is bringing up as incomplete. I am asking you to delay this vote and revise this report for many reasons.

20 years is way too long to operate on an incomplete and outdated report.

1) The report does not acknowledge that on November 8th, Maui County voters will decide if a Community Water Authority should be established. I will vote in favor of it because our precious wai should not be controlled by a foreign corporation.

This major change will determine water strategies for the entire island, starting with the E. Maui Water area which is yet to be designated as a ground or surface water management area. I thought it was illegal to sell water from an area that doesn't have this designation per the Water Management information from the DNLN.

2) It does not acknowledge the recently designated Lahaina Aquifer as a surface or groundwater management area.

3) The Plan has not adequately considered larger conservation goals and grey water usage for irrigation in the leeward sides of the island.

4) The WUDP is not addressing the upcountry water meter list with current information. The solution it offers isn't addressing the real issue about why this hasn't been done already.

5) Water demand numbers need to be more closely examined. Estimated numbers based on old data are doing our community a disservice. The plan should be based on the best climate data considering how climate change and drought are rapidly affecting our rainfall patterns.

6) Being a Ha'ikū farmer, I'm very alarmed about our aquifer and wells being the only option for future 8 mgd water delivered to S. Maui. There are many people who have been waiting for a water meter for over 20 years and the Ha'ikū community plan asks that the water needs of Ha'ikū and Paia be met before water is transported anywhere. County Staff refuses to include this language from our community plan.

It needs to be included.

There also needs to be a plan B if through investigation, our aquifer cannot be relied on. No one knows how long term drought or more well drilling will be affected by our ongoing drought. This needs comprehensive study by professionals.

I have observed the stream behind my property in the Hulunuihulunui gulch being turned off and on. It was always a perennial stream as well as the stream in E. Kuiaha gulch, now bone dry. It appears that it's being diverted but no one is managing these streams. It's being filled with invasive

plants and trash that now can be seen from the bridges on Ha'ikū Rd.

7) West Maui water demand appears to be inflated.

The projected population numbers seem to suggest that population expansion should be limited in this area if the water needs in 15 years cannot be met. We do not need more hotels and condos for visitors when hard working local young families are leaving the island in droves because they cannot find an affordable place to rent or purchase.

Why is the reclaimed water from the sewage treatment plants not a factor in supplying the agricultural needs of golf courses, resorts, county fields island wide?

Protecting the existing aquifer is crucial to the community of W Maui as it is everywhere.

There needs to be more in depth work done on this report and please, respect and wait till the voters have time to weigh in on the charter amendment.

Mahalo for your time and please do not approve this report, it needs revision.

Please confirm that this testimony has been received and reviewed by the Water Commissioners.

Barbara Barry

Ha'ikū

From: [DLNR.CW.DLNRCWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)
Date: Thursday, September 22, 2022 9:20:15 AM

From: Leslee Rachel Cooper
Sent: Wednesday, September 21, 2022 4:23 PM
To: DLNR.CW.DLNRCWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)

Aloha to you, a man or woman who represents the County of Maui, Department of Water Supply

As a Maui resident, voter, and land owner, i ask the County of Maui, Department of Water Supply to **revise** the current proposed Maui Island Water Use and Development Plan (MIWUDP) as published at <https://waterresources.mauicounty.gov/DocumentCenter/View/608/Ord-5335>.

I ask that you **not** approve the current draft show at <https://waterresources.mauicounty.gov/DocumentCenter/View/608/Ord-5335>.

Before I go further to share some of my reasonings below, I want to thank all of you at the Water Supply Dpt. for the immense amount of work that has clearly already been done on this document. It is obvious that you have put a lot of effort into this and I thank you for that.

This ordinance/document is of extreme importance for the future of Maui and this is why I request that it be further revised, not approved "as is." I respectfully offer some of my reasons for this request below.

BACKGROUND ON MY COMMENTS BELOW:

I downloaded the Maui Island Water Use and Development Plan Draft and read through it. I discovered that, although my former career involved clinical research and data review (medical), this topic is very complex, specialized and multi-faceted. I decided to consult with other Maui residents who are much more familiar with this topic. I learned a lot and can now clearly share several reasons why this draft should be revised, not approved.

Here are some of the key concerns or comments:

- **COMMUNITY WATER AUTHORITIES.** The WUDP does not include any reference to potential Community Water Authorities. If the Community Water Authorities charter amendment passes, these Community Water Authorities will play a significant role in Maui's water future. It would be wise to not approve the current draft until it is determined whether the Community Water Authorities charter amendment passes.
- **PROFESSIONAL CONSULTANTS.** It's my understanding that other islands hired professional consultants to help them bring their water data, charts, maps, etc. up-to-date, proof the accuracy of the aforementioned and to assist in drafting their final water plans. I ask that Maui do the same. Maui deserves the best water plan available.

- **SOME IMPORTANT DATA NEEDS TO BE UPDATED/UTILIZED:** This plan is extremely important and deserves to be thoroughly updated with the most accurate and current data. There are numerous instances where old data has been used or the current numbers are not made available. For example, the upcountry meter list section of the WUPD uses doesn't match the current Upcountry Meter List. Another example, the WUDP uses older data to estimate water needs. Estimates need to be backed up by accurate current data.
- **WATER CONSERVATION GOAL TOO LOW.** Water conservation goals of 8% per capita are too low given the increased periods of drought and less rainfall that have already been recorded. This goal is another example of an estimate or projection that needs to be based on the latest data or modeling. In addition, I ask that scientific projections be further considered in setting this goal. Some experts are predicting that Maui's rainfall rates will continue to decline and that there is a trend toward greater desertification. I ask that Maui's Water conservation goals be more robust, more ambitious.
- **ESTIMATE OF WATER DEMANDS.** The estimates of growing water demands in West Maui over the next 15 years is a very large number: 64% increase with an increased water demand from 9.4 mgd to 15.7 mgd in 15 years. Is this projection accurate? NOTE: it sounds unsustainable given the current and projected state of Maui's aquifers and waterways.
- **HA'IKŪ WATER AQUIFER.** More research needs to be done, more accurate data needs to be determined about the Ha'ikū water aquifer as it is proposed as a solution to provide 8mgd of water to South Maui. More needs to be known about the aquifer's capacity and depth and whether it could support this. This is not known. And alternative plans are needed if it proves to be unviable for this.

UPDATES/REVISIONS. I could give more examples however this email is already long.

IN CONCLUSION.

Some of the plan's estimates, projections, and solutions need to be re-examined and revised in terms of the best current data. And it would be wise to factor in the changing times and probable future trends before approving the final estimates, projections, and solutions.

Please send this plan back for revisions. Do not approve this draft of the MIWUDP.

Mahalo for your time and attention. I thank you for your service to Maui county.

Leslee Rachel Cooper

From: [DLNR.CW.DLNRCWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)
Date: Thursday, September 22, 2022 8:55:29 AM

From: Blaze Anderson
Sent: Wednesday, September 21, 2022 1:13 PM
To: DLNR.CW.DLNRCWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)

Please Revise the current water use and development plan to further address outstanding issues related to Maui= community plans, especially in the Haiku areas.
My request is to NOT Approve the current plan.
Mahalo, Blaze Anderson

From: [DLNR.CW.DLNRCWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)
Date: Thursday, September 22, 2022 8:54:19 AM

-----Original Message-----

From: Judy
Sent: Tuesday, September 20, 2022 8:06 PM
To: DLNR.CW.DLNRCWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)

Maui needs a much more thoughtful and comprehensive plan than the one you are recommending. This is one of the greatest challenges facing us and it deserves a truly professional and thoughtful plan. Please give it the support needed.

Mahalo
Judy McCorkle

Sent from my iPhone

From: [DLNR.CW.DLNRCWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)
Date: Thursday, September 22, 2022 8:54:11 AM

From: Mauricio Lopez
Sent: Tuesday, September 20, 2022 6:52 PM
To: DLNR.CW.DLNRCWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)

Aloha,

I'm writing to request that the Maui Island Water and Development Plan be revised as I do not feel that it is ready for approval. I find the data provided to be unclear. As a Haiku resident who relies on water catchment because the county water list is closed to me, I'm very concerned with how the county manages the water and question if it's to the ultimate benefit of the local residents.

Mahalo for not approving the plan and allowing for time to revise for ultimate clarity and to protect this precious resource well into the future.

Mahalo for your time,

Mauricio Lopez

From: [DLNR.CW.DLNRCWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)
Date: Thursday, September 22, 2022 8:54:04 AM

From: Morgan Lopez
Sent: Tuesday, September 20, 2022 6:34 PM
To: DLNR.CW.DLNRCWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)

Aloha,

I'm writing to request that the Maui Island Water and Development Plan be revised as I do not feel that it is ready for approval. I find the data provided to be unclear. As a Haiku resident who relies on water catchment because the county water list is closed to me, I'm very concerned with how the county manages the water and question if it's to the ultimate benefit of the local residents.

Mahalo for not approving the plan and allowing for time to revise for ultimate clarity and to protect this precious resource well into the future.

Mahalo for your time,

Morgan Lopez

From: [DLNR.CW.DLNRCWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP),
Date: Thursday, September 22, 2022 8:48:40 AM

From: Paula Phillips
Sent: Tuesday, September 20, 2022 2:47 PM
To: DLNR.CW.DLNRCWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP),

Aloha DLNR,

I would like you to acknowledge that there are still way too many things wrong with the Maui Island Water Use and Development Plan for its' approval. Being a resident of Haiku for over 40 years I would like to bring to your attention that the Ha'ikū aquifer is the main source for new county water wells, but you continue to ignore Ha'ikū-Pā'ia community plan. Ha'ikū's community plan asks that the water needs of the community be met before water is transported elsewhere. Ha'ikū residents have had no access to new county water meters for 20 years or more and must catch rainwater or drill expensive wells. County staff refused to include Ha'ikū-Pā'ia community plan language in WUDP strategies. So when we cannot wash our cars or water our yards, South Maui can have condo cleaners or tourists that run the dishwasher with 2-3 dishes. We have water restrictions when other parts of the island do not, but this is where the water is coming from (as well as Wailuku). Ha'ikū wells are the County's main solution for providing 8 mgd of water to South Maui, but the plan does not acknowledge how very little is known about the aquifer and its specific capacity and depth. There is no clear alternatives stated in the MIWUDP.

The Maui Island Water Use and Development Plan, which will be used as a blueprint for all uses of water on Maui for the next 20-years and also sets the course for our future water conservation, development and tourism growth. It is not ready for approval yet.

Please do not approve this plan!

Mahalo for your time and consideration,

Paula Phillips

Haiku



Virus-free www.avast.com

From: [DLNR.CW.DLNR.CWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)
Date: Monday, October 10, 2022 11:02:11 PM

From: William Greenleaf
Sent: Wednesday, September 28, 2022 1:51 PM
To: DLNR.CW.DLNR.CWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)

Aloha Chair:

I'm asking for this plan to be deferred and developed in a manner that provides accuracy and respects the local culture (Haiku Community Plan)

The 1200 page plan needs simplification and revision.

The numbers in the tables are not the most recent numbers...if you check them, you'll see and that's a red flag about the entire plan.

Haiku Community Plan is being ignored...that's disrespectful and could lead to a lawsuit.

Water Conservation is not a big enough part of the plan. 10 of the biggest water users are in the Central Maui Water District...Hotels across Hawaii (except Maui) are required to use much less water than unlimited...Hotels on Maui need to be included in the plan...they can plant drought tolerant plants, publicize their efforts so that guests will feel cultural needs are being respected...Respect breeds respect.

Maui's Water Dept wrote this plan...they may not be capable...this is the same Dept that has been told by AgWorkingGroup that MauiCounty can use Gen Obligation bonds to build water storage and to improve WaterShed and delivery system...In my 22 years here, they have ignored their Kuleana and been a thorn in the side of local agriculture

I understand Moloka'i is going to have a Consultant develop a Water Use Plan...this step needs to happen on Maui

Planet Earth has demonstrated the Climate is Changing in dangerous ways...droughts are now global...Maui is no exception. This plan does not consider what

we are dealing with in Climate Change.

UpCountry Water list...this plan suggests: 'Assess alternative options to....' Why hasn't anything been done by Maui County Water Dept? More studies are not needed...Water Storage is needed..

The Haiku aquifer is the main source for new county water...Sharing is Aloha...this plan is not necessarily about sharing if the source can not accommodate local needs and what is taken...that becomes legalized stealing, not sharing..

Haiku has a much different water draining process than other areas on Maui... because of the amount of water historically falling on Haiku, the saturation in the ground causes water to move horizontally as it drains into the aquifer...this changes during drought and we don't have any studies to understand the true nature of how water moves underground in Haiku...Studies are needed as part of plan.

Why are we stealing water from Haiku to build more Hotels rooms? Are the numbers of past and future use accurate. (Hint, they are outdated)

I imagine this panel realizes many of these errors and oversights...I hope my testimony helps your decision to defer while planning to gather accurate information...

Mahalo,
Bill Greenleaf

From: [DLNR.CW.DLNRWWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)
Date: Monday, October 10, 2022 11:01:28 PM

From: Linda Franz
Sent: Monday, September 26, 2022 2:56 PM
To: DLNR.CW.DLNRWWRM <dlnr.cwrw@hawaii.gov>
Subject: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)

1. .Your water plan has 1,200+ pages and has confusing charts and old data. You need to hire a professional consultant to make this plan useful with updated numbers. The Water Commision should not approve this draft of the MIWUDP.
2. Water Conservation goals of 8% per capita are too low when we know we have increased periods of drought with less rain. These goals need to be increased.
3. Very little is known about the Ha'iku - Paia aquifer and its capacity and depth. Studies need to be done to determine actual capacity and depth.
4. The Ha'iku - Paia aquifer is the main source for new county water wells, but the water needs of this community is being ignored because no new water meters have been issued to residents for over 20 years; as well as the fact that Ha'iku's community plan states that the water needs of the community be met before water is transported elsewhere.
5. Water demands by West and South Maui are being prioritized over the needs of the entire upcountry area because the tax base for West and South Maui exceeds that of upcountry. This is favoritism based upon where wealth is concentrated. It is criminal that the needs of the upcountry area are not being met, but instead are being allocated to areas that bring in more tax revenue.
6. I can only demand that the Water Commision revise and not approve the current draft of the MIWUDP!

--

Linda Franz

From: [DLNR.CW.DLNRCWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)
Date: Thursday, September 22, 2022 8:46:40 AM

From: Steve Freid
Sent: Tuesday, September 20, 2022 1:13 PM
To: DLNR.CW.DLNRCWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)

I sincerely don't like the plan to do with water use!!

--

Aloha,

Steve Freid

<http://lifeonmaui.com/>

From: [DLNR.CW.DLNRCWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)
Date: Thursday, September 22, 2022 8:46:07 AM

From: Laura Civitello
Sent: Tuesday, September 20, 2022 11:47 AM
To: DLNR.CW.DLNRCWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)

As a longtime Maui resident and one who has worked with youth for many years, I am very passionate about Maui's environmental and water issues. I look to those who have spent decades on the front lines of these issues, those who personally know the land, to clarify our needs when it comes to water. I firmly trust that Maui County needs to hire a consultant to cut through the confusion and expired data of our current Water Plan. We need to completely reassess the plan, taking into consideration the Ha`iku-Pa`ia community plan. Mahalo,
Laura Civitello

From: [DLNR.CW.DLNRWORM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Maui Water Use and Development Plan Testimony 9/21/2022
Date: Thursday, September 22, 2022 8:55:12 AM

From: David Dorn
Sent: Wednesday, September 21, 2022 11:21 AM
To: DLNR.CW.DLNRWORM <dlnr.cwrw@hawaii.gov>
Subject: [EXTERNAL] Maui Water Use and Development Plan Testimony 9/21/2022

Maui Water Use and Development Plan Testimony 9/21/2022

Meeting: Sept 21 @ 6 pm Kihei Community center
Email comments to: dlnr.cwrw@hawaii.gov
Topic: Maui Water Use and Development Plan

Re: Maui's Water Future Needs a Plan we Can all Understand with Best Data Available.

Hi, my name is David Dorn,
Please do not approve this water plan. It is unfair, unsustainable, and inequitable.
And this plan is based on old, erroneous data and does not address current community plans or community needs.

1. This plan deprives residents from accessing their local water supplies, while sending water to other parts of the island for the benefit of other communities.
2. The plan does not consider climate change and the future sustainability of water sources.
3. The plan does not address the community plans of the areas when it proposes extracting water.
4. The plan ignores the current issues of creating regional community-based water boards, that are on the ballot in the next election.
5. The plan also unfairly allocates a large amount of water for future developments that may not occur in west Maui, because the county has determined that the current levels of hotels and resorts in west Maui should remain constant.
6. The Water plan does not prioritize water use for current residents over the allocation of water for future hotels and resorts for tourists that may never be built.
7. The plan does not prioritize streams and ecosystems over commercial farming.
8. The plan does not guarantee protection for streams, or aquifers, from overuse.
9. And the plan does not ensure fair access for cultural and traditional farmers and water users to their necessary and sustainable water requirements.
10. The plan does not do enough to minimize water use, in hotels, resorts, and new housing, and to ensure that water is not wasted.
11. This Plan does not do enough to protect the watershed lands and natural systems that produce and collect the water.

What is Maui's maximum sustainable population with regard to current and future water availability?

- The maximum healthy/sustainable water limit should be used to set a maximum allowable human population on Maui, including all tourists and residents. And to set maximum levels of livestock agriculture.
- Water needs to be allocated first for the environment, cultural and traditional areas, current residential needs, and sustainable agriculture. The tourism sector must come after that.
- Sustainable water limits should also consider the proper and healthy allocation to all streams and ecosystems that depend on water, now and in the future.
- Sustainable water limits must account for reduced rainfall due to climate change, and provide for reserves and buffers to account for prolonged droughts.
- Water limits and supplies must be able to buffer the negative effects of natural disasters that can impact water availability, contaminate supplies, and also damage water infrastructure.

Suggested Water Use “Code of Ethics and Priorities”:

- Sustainable in-stream flows must be established and provided before exporting any surplus water.
- There should be no exporting water out of any district until local needs are met.
- Local AG uses such as taro farming, traditional and culturally significant farms, and small family farms should be allocated water first before any industrial agriculture or business farm.
- Development is growing faster than the available water supply. There has been no maximum sustainable population limit set with regard to the available supply of water on Maui.
- Human activity should not be allowed to contaminate water sources, streams, groundwater, and aquifers.
- Ban the use of all toxic, forever chemicals from agriculture and industry, that can harm our water supplies.

USE AND PRESERVATION OF AQUIFERS:

- Aquifers are the water source held in trust for our future generations.
- Aquifers must not be overdrawn lest they allow salt water tables to rise.
- The aquifers must not be contaminated by chemicals and pollutants.
- Aquifers are not to be used before surface water sources are used.
- Aquifers have long recharge periods, sometimes hundreds of years.
- Aquifers and groundwater are necessary for habitats and ecosystems, such as wetlands, springs, and offshore marine environments.
- Do not waste our aquifers for watering golf courses (golf courses use 1 million gallons of water per day).
- Golf courses and agricultural activities use chemicals and fertilizers that contaminate groundwater, aquifers, and leech into the ocean after rains.
- No Toxic Chemicals should be allowed to be sprayed or disbursed within the watershed that can enter the water tables, groundwater, and aquifers.

RESTRICT WATER FOR GOLF COURSES:

- Golf courses are heavy water users.
- Golf courses use approximately 1 million gallons of water per day.
- We should not waste our aquifers for watering golf courses.
- Golf courses use chemicals and fertilizers that contaminate groundwater and leech into the ocean after rains.

- Golf courses should be obligated to use R1 water if available.
- Golf courses should be required to have limited water use permits.
- Golf courses should have strict controls on the types of chemicals and fertilizers that they are allowed to use, as they all end up in groundwater, streams, and the ocean.
- Golf courses should only be located in areas with sufficient rainfall to sustain them without significant supplemental irrigation.

WATER USE FOR NEW HOUSING:

- New housing should be required to use low-flow toilets, showerheads, and aerated faucets in the bathrooms.
- New housing projects should only have native xeriscaping, or food-producing landscaping, with rooftop rain-capture and rain-gardens.
- New housing should incorporate irrigation by greywater.
- New affordable housing should always include solar hot water, PV, and greywater reuse.
- All Affordable housing, workforce housing, and rental housing should provide space for air-drying laundry.
- Greywater should be used to flush toilets.

REGARDING WATER USE FOR AGRICULTURE:

- Water should only be used for agriculture on an as-needed basis.
- Year-by-year usage amounts are to be allocated as needed.
- Whenever farmland is not productive, the water allocation should cease.
- Water should be allocated for the crop, and not arbitrarily for the land.
- Agriculture should not be used as a form of water banking to enable conversion into housing and real estate.
- Unproductive farmland should automatically forfeit its water rights.
- Unproductive farmlands should be returned to the state after a period of time.
- Livestock agriculture uses large amounts of water.
- Ranching and free-ranging cattle, and other ungulates (pigs, goats sheep,) damage the soil, and groundcover plants, and harms the watershed lands.
- Livestock production (ranching) reduces the watershed's ability to absorb and infiltrate rainwater into the groundwater.
- Ranchers must take better steps to minimize the damage that livestock does to the watershed and catchment lands.
- Livestock also produces large amounts of waste products that contaminate streams and water supplies.
- Agriculture must be managed to cool the climate and increase rainfall.
- Planting perennial crops such as breadfruit trees gives shade, cools that land, improves soil stability, and increases rain infiltration.
- Annual crops that require bare earth farming increase soil loss, and increase moisture loss. And reduce rainwater infiltration.
- Agriculture should be appropriate to the rainfall specific to the area. Crops should be selected to thrive with available rainfall or a specific area, and not rely on supplemental irrigation.
- Agriculture must be balanced by the environment: For example, The celebrated “One Million (fruit) trees” planted by Mahi Pono, must be offset by planting 1 million native forest trees in the watersheds.

PROTECTING WATERSHEDS:

Watersheds are the water makers.

- Watershed lands need to be preserved because they produce water by capturing rain, which provides surface water, and streams, and also recharges groundwater and aquifers.
- You cannot have this plan to distribute all of this water without having a plan to protect and enhance the watersheds that produce the water.
- Watersheds need to be preserved as native vegetation, and not turned into farmland. Farmland is a bad substitute for natural watershed lands.
- We need to replant native forests. To cool the climate, encourage rainfall, stabilize the soil, and capture rain. The watershed needs to have proper functioning gulches and streams/streambeds to be healthy.
- Streams and Gulches need to be preserved from development; Streams and gulches need to be protected in perpetuity, and properly managed to remain functional and healthy.
- Livestock and feral animals should not be allowed into stream beds where they cause the greatest harm.

PROPER UTILIZATION OF RECLAIMED WATER:

- Our wastewater facilities clean our wastewater at great expense, and produce High-Quality R1 water.
- This water is a valuable asset that must not be wasted. R1 water still contains many nutrients that should not be put directly into the ocean or the groundwater.
- Wastewater injection wells harm the ocean waters and degrade coral reefs. All R1 Water should be utilized on the surface, for irrigation and agriculture.
- Plants have the ability to bio-metabolize many of the nutrients and break down harmful compounds found in wastewater.
- Reclaimed water can and should be used for golf courses, irrigation for hotel landscaping, irrigation for public parks, and for agriculture.
- Reclaimed water can be used to provide green belts in the watersheds that can stabilize soils, and help cool the environment.
- We need to make a commitment to have 100% reclaimed water utilization by 2025.
- We should also try to phase out all wastewater injection wells by 2025.
- We should also phase out all cesspools that leach into groundwater and pollute water sources.
- We can improve the quality of our wastewater by banning non-biodegradable laundry soaps from Maui county.
- We have a sunscreen ban, but think about the damage that all of the wastewater can do when it is contaminated by harmful substances.

HOTEL/RESORT WATER SAVING POLICIES:

- Hotels should be required to educate guests about the environmental footprints of laundry operations, and by encouraging guests to minimize the requirements for fresh towels and linens.
- Hotels should be required to install water-saving toilets, showerheads, and tap aerators to save water.
- Bed linens should only be washed once per stay or once per week.
- Fresh Towels Daily is okay but their reuse should be encouraged.
- Resorts should be obligated to use R1 for landscaping if available.
- New hotels to incorporate greywater reuse systems.
- Hotels to incorporate rooftop rain-capture designs.
- New hotels should be 100% solar hot water and PV sustainable.

Mahalo,
David Dorn

REFERENCES (and Recommendations):

Require Golf Courses to use R1 water if available; A golf course can use as much as one million gallons of water per day: A golf course can use as much as one million gallons of water per day for irrigation and other nondomestic uses and it is inappropriate to use potable water for such purposes.

<https://www.mauicounty.gov/DocumentCenter/View/10390#:~:text=A%20golf%20course%20can%20use,potable%20water%20for%20such%20purposes.>

Limit and discourage drinking water use for landscape irrigation:

- Create a step-up fee system when consumers use water over normal personal use.
- Each person in a Home/condo/hotel should use no more than 100 Gallons per day.
- 100 gallons per day per person, should be the maximum level available at the lowest tier rate.
- Additional water used should be sold at a much higher rate, this would encourage water efficiency, and promote water-saving behaviors.

A typical three-person family uses 165 gallons of water every day, but their irrigation system can add another, 1,920 gallons each day they water.

(<https://www.wsscwater.com/understandusage>)

Encourage greywater reuse for landscape gardening:

Condos and hotels to retrofit and get tax credits.

Reusing greywater can save families up to 40,000 gallons of water per year, and ease the burden on your septic system in the process.

(<https://waterwisegroup.com/greywater-education/greywater-systems-in-residential-homes/>)

The amount of greywater produced in a household can vary greatly ranging from as low as 15 L per person per day for poor areas to several hundred per person per day.

[Greywater Characteristics, Treatment Systems, Reuse ... - NCBI](#)

Create Fines for any ag or industrial users chemicals found in surface water or groundwater: No forever chemicals should be allowed. No long-lived pesticides or herbicides are allowed. All chemicals sprayed outdoors must be reported to the water authority, and tested for in the water supply.

Soil control: sediments should not be allowed to leave AG lands. Ranchers should be required to install retention ponds and use soil control measures, at their own cost.

Control Water waste and water-hoarding:

- Water dumping should not be allowed.
- Water hoarding should not be allowed.
- Water banking should not be allowed.
- Water storage should not be allowed to exceed annual water use.
- No large dams or reservoirs: and they should not exceed safety limits.

Water use rates for ornamental landscaping should be much higher than for food gardens or native plants. Food-producing gardens should be able to get a discount/rebate.

Climate change will reduce rainfall:

- Current levels of water use may not be sustainable in the future.
- Limit growth to currently available water supplies.

Encourage Water Efficiency:

- We can all use at least 20 percent less water by installing water-efficient fixtures and appliances. <https://www.epa.gov/watersense/statistics-and-facts>

Hotel laundry water consumption:

Water Consumption: Commercial laundry machines range in size from 25 to 400 dry pounds of laundry per load and use anywhere from 2.5 to 3.5 gallons of water per pound of laundry. This can translate to as much as 1,400 gallons of fresh water per load which is a significant quantity of fresh water.

<https://danamark.com/resources/improving-water-footprint-laundry-machines/>

Hotel water usage per room

According to studies, the daily average water usage per hotel room ranges from 100-400 gallons. **Luxury Hotels VS. Standard Domestic Consumption**
Studies show that per overnight stay, luxury hotels use several times standard domestic consumption per capita.

<https://purebluesustainability.com/hotel-water-consumption-statistics-conservation/#:~:text=According%20to%20studies%2C%20the%20daily,ranges%20from%20100%2D400%20gallons.>

Hotel Rooms use between 100-400 Gallons of water per day:

Total water usage across a wide variety of hotels ranges from **under 100 gallons per day per room** (gpd/rm) to over 400 gpd/rm. Older, luxury hotels and hotels with full-service restaurants and on-site laundry facilities typically exhibit the highest water usage per room. How many gallons of water does a hotel room use per day?

Total water usage across a wide variety of hotels ranges from **under 100 gallons per day per room** (gpd/rm) to over 400 gpd/rm. Older, luxury hotels and hotels with full-service restaurants and on-site laundry facilities typically exhibit the highest water usage per room.
[Hotel Water Conservation - Seattle.gov](#)

Hotel Water Demand:

Water is a key aspect for any tourist destination. The pressure of tourism on water resources, and specifically by the hotel sector on islands and coastal areas, threaten

the sustainability of the resource and, ultimately, of the destination.

https://www.researchgate.net/publication/334904238_Hotel_Water_Demand_The_Impact_of_Changing_from_Linear_to_Increasing_Block_Rates

Hotel Swimming Pools:

Require Hotel swimming pools to pump out pools and to reuse water for irrigation or off-site use. No dumping/wasting of pool water should be allowed.

From: [DLNR.CW.DLNRCWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Please revise MIWUDP
Date: Monday, October 10, 2022 11:01:51 PM

From: Summer Dien **Sent:** Monday, September 26, 2022 8:40 PM
To: DLNR.CW.DLNRCWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] Please revise MIWUDP

I don't approve of the current proposal. Please revise it.

Here are my reasons why

People can't understand what the Water Plan says

~ It's 1,200 plus pages and filled with confusing charts, lots of jargon, and old data.

We need a Professional consultant to make the plan useful and update the numbers

~ The Water Commission should not approve this draft of the MIWUDP – but should ask the County to hire a professional consultant to streamline it, make the plan clear, and update the data – as the other islands have done.

The Plan is missing any reference to potential Community Water Authorities

~ The WUDP should not be approved until we know if the Community Water Authorities charter amendment will pass. It

would be a big part of future water strategies for all parts of Maui. Nor does the WUDP include the recent designation of the Lahaina Aquifer Sector as a Surface Water and Ground Water Management Area.

The plan needs to aim for larger water conservation goals

~ Water Conservation goals of 8% per capita in the WUDP are too low. With increased periods of drought and less rainfall predicted for many areas, water conservation goals need to aim higher.

We need a WUDP with real solutions for the Upcountry meter list - it's been 20 years!

~ The Upcountry meter list section of the WUDP uses old numbers & doesn't provide any real breakdowns of water demand or specific solutions. The current Upcountry list is 1,428 - the WUDP still says there are 1,800 requests and that 7 mgd of water is needed. What is the real number? The WUDP "solution" language says: "Assess alternative options to restructure and process the existing Upcountry Meter Priority List..." - Why hasn't this been done over the last decade?

The WUDP needs to re-examine water "demand" numbers - The plan uses old data - Times have changed
~ The WUDP uses old data, even when newer numbers are available. This boosts estimated water needs, but the numbers may be inaccurate. We need a plan with the best data available in the face of the uncertainties posed by climate change.

The Ha'ikū aquifer is the main source for new county water wells - but the WUDP ignores Ha'ikū - Pā'ia community plan.

- ~ Ha'ikū residents have had NO access to new county water meters for 20 years or more and must catch rainwater or drill expensive wells. Ha'ikū's community plan asks that the water needs of the community be met before water is transported elsewhere. County staff refused to include Ha'ikū - Pā'ia community plan language in WUDP strategies.
- ~ Ha'ikū wells are the County's main solution for providing 8 mgd of water to South Maui, but the plan does not acknowledge how very little is known about the aquifer and its specific capacity and depth. There is no clear plan "B."

West Maui water demand projections seem inflated

~ Will West Maui population really increase 64% to 40,000 as the WUDP theorizes, boosting water demand from 9.4 mgd today to 15.7 mgd in 15 years? Is this sustainable, given the area's stressed aquifers and drying streams?

~ The WUDP estimates that hotels and luxury resort condos will add many more rooms and will need an additional 2 mgd from private water systems over the next 15 years. Our County Council has proposed limiting new resort units in West Maui to what exists now. Should the WUDP use this outmoded Lahaina demand for resort/business water needs if few new visitor units are planned?

~ Will there be enough water for homes that existing Lahaina families can afford? Does the WUDP figure in the existing Lahaina residents who need homes, who are not "new" population?

Sent from Summer Dien's magical iPhone

From: DLNR.CW.DLNRCWRM
To: Kimura, Jeremy L
Subject: FW: [EXTERNAL] please revise, not approve the current draft of the MIWUDP.
Date: Thursday, September 22, 2022 8:45:39 AM

-----Original Message-----

From: Jennifer Valentine
Sent: Tuesday, September 20, 2022 10:44 AM
To: DLNR.CW.DLNRCWRM <dlnr.cwrm@hawaii.gov>
Subject: [EXTERNAL] please revise, not approve the current draft of the MIWUDP.

People can't understand what the Water Plan says ~ It's 1,200 plus pages and filled with confusing charts, lots of jargon, and old data.

We need a Professional consultant to make the plan useful and update the numbers ~ The Water Commission should not approve this draft of the MIWUDP – but should ask the County to hire a professional consultant to streamline it, make the plan clear, and update the data – as the other islands have done.

The Plan is missing any reference to potential Community Water Authorities ~ The WUDP should not be approved until we know if the Community Water Authorities charter amendment will pass. It would be a big part of future water strategies for all parts of Maui. Nor does the WUDP include the recent designation of the Lahaina Aquifer Sector as a Surface Water and Ground Water Management Area.

The plan needs to aim for larger water conservation goals ~ Water Conservation goals of 8% per capita in the WUDP are too low. With increased periods of drought and less rainfall predicted for many areas, water conservation goals need to aim higher.

We need a WUDP with real solutions for the Upcountry meter list - it's been 20 years!
~ The Upcountry meter list section of the WUDP uses old numbers & doesn't provide any real breakdowns of water demand or specific solutions. The current Upcountry list is 1,428 – the WUDP still says there are 1,800 requests and that 7 mgd of water is needed. What is the real number? The WUDP “solution” language says: “Assess alternative options to restructure and process the existing Upcountry Meter Priority List....” – Why hasn't this been done over the last decade?

The WUDP needs to re-examine water “demand” numbers - The plan uses old data – Times have changed ~ The WUDP uses old data, even when newer numbers are available. This boosts estimated water needs, but the numbers may be inaccurate. We need a plan with the best data available in the face of the uncertainties posed by climate change.

The Ha'ikū aquifer is the main source for new county water wells - but the WUDP ignores Ha'ikū - Pā'ia community plan.

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West Maui water demand projections seem inflated ~ Will West Maui population really increase 64% to 40,000 as the WUDP theorizes, boosting water demand from 9.4 mgd today to 15.7 mgd in 15 years? Is this sustainable, given the area's stressed aquifers and drying streams?

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~ Will there be enough water for homes that existing Lahaina families can afford? Does the WUDP figure in the existing Lahaina residents who need homes, who are not “new” population?

There are many more concerns – Our Water Use and Develop Plan needs to reflect the realities of our current times and show a clear, responsible pathway ahead.

mahola - jennifer valentine

From: DLNR.CW.DLNRCWRM
To: Kimura, Jeremy L
Subject: FW: [EXTERNAL] Reject WUPD
Date: Thursday, September 22, 2022 8:47:19 AM

-----Original Message-----

From: steve@vcasa.net
Sent: Tuesday, September 20, 2022 1:26 PM
To: DLNR.CW.DLNRCWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] Reject WUPD

It's almost 40 years since I attended my first water meeting on Maui. I'm not going to sit through hours of listening to the same arguments that get ignored year after year after driving halfway across the island. I assume sending this email is similar to talking to one of my four walls, but I'll do it anyway.

My biggest input is the community water authorities. The time is really ripe, so many years of corporate and corporate supporting government agencies.

Having lived 40 years in Haiku, the past 20 years surviving only on catchment, I'm well aware of water issues in our area. The idea that the Haiku aquifer can be a source of water for Central Maui is arrogantly dangerous. Many of my neighbors have wells, and the idea that without sufficient scientific study of the aquifer we're going to let corporate needs supersede residence necessities. I could not afford a well, it's \$150,000 now. So when these corporate uphill wells get drilled above the existing, costal, residential wells and change the aquifer . . .

Well too many talking points and if I were to go through with actually speaking in my three minute allotted testimony it would just be dragging on anyway so let's leave it at my input, insisting on two points:

- 1.) Reject the WUPD (the same old s***, shamefully fattend and shinolaed, by corporate marketing).
- 2.) Create the Community Water Authorities

Disgruntledly Yours,
Steven Slater

From: [DLNR.CW.DLNRWCRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Testimony for 9/21/22 meeting
Date: Thursday, September 22, 2022 8:55:23 AM

From: Char O'Brien
Sent: Wednesday, September 21, 2022 12:03 PM
To: DLNR.CW.DLNRWCRM <dlnr.cwrw@hawaii.gov>
Cc: Char O'Brien
Subject: [EXTERNAL] Testimony for 9/21/22 meeting

Maui Water Use and Development Plan Testimony 9/21/2022

Meeting: Sept 21 @ 6 pm Kihei Community center
Email comments to: dlnr.cwrw@hawaii.gov
Topic: Maui Water Use and Development Plan

I would like to give testimony for tonight's meeting: **Maui Water Use and Development Plan**

1. Water is well established as a public trust in Hawaii
2. As such it should be the public that is in charge of the distribution of the precious water that falls on our island
3. The public is being asked to vote on proposition #12 in the next election which if passed will set up local governing boards around the island
4. It is simply counterintuitive to give control of our water system to a foreign corporation - control must finally rest with the people
5. The water must be efficiently distributed among all who need it.
6. By charging equitable water prices the county will have the money to fix the aging water collection systems on this island.
7. By charging fair prices the County will have the money to fix the infrastructure and increase the vegetation in the watershed regions

Thank you

Charlotte OBrien

From: [DLNR.CW.DLNR.CWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Topic: Maui Island Water Use and Development Plan (MIWUDP)
Date: Thursday, September 22, 2022 1:51:43 PM

From: dawny@tiki.net
Sent: Tuesday, September 20, 2022 8:45 AM
To: DLNR.CW.DLNR.CWRM <dlnr.cwrn@hawaii.gov>
Cc:
Subject: [EXTERNAL] Topic: Maui Island Water Use and Development Plan (MIWUDP)

I am writing in support of the PEOPLE of Maui.

Under the state constitution, the state is obligated to protect, control and regulate water resources for the benefit of its PEOPLE. It does not say for CORPORATIONS or Large Companies alone. Water needs to be accessible for ALL FARMERS, large and small not only Corporate Farmers to the detriment of small local farmers, especially for Taro.

Upcountry folks have been iced out of water meters by Maui County unless they do some backdoor deal...or run miles of water lines at their own expense, that is wrong. It seems like a covert action to limit growth upcountry. If that is the case be honest and forthright, what a humane concept! Honesty! Try implementing fair impact fees for regulation.

DLNR needs to meet the needs of the many not only Mahi Pono and its Canadian owners. Regular Maui folks need water to farm, feed their families and make money selling their produce.
Please Malama Pono for the benefit of the PEOPLE of Maui.

Maui needs to limit hotel growth and support its peoples needs, not just big out of state money holders. Maui & DLNR need to use more current statistics, not those from 2010 to 2016.
DLNR needs to do the same and share the water with all, work with the county to restore water to all, not just the historic chosen few water hogs.

Malama Pono DLNR & County of Maui!

Sincerely,
Dawn Matney
Upcountry resident

From: [DLNR.CW.DLNRCWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Water meeting 9/21/22
Date: Thursday, September 22, 2022 8:56:06 AM

From: pah
Sent: Wednesday, September 21, 2022 4:00 PM
To: DLNR.CW.DLNRCWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] Water meeting 9/21/22

Greetings to the Commission and all who work to protect Hawai'i resources.

I am shocked by this proposed plan and the continued violation of water rights that are happening here. Water is a public trust which has endless battles to protect life in the streams, natural habitat, and water usage for already existing humans who live here. The amount of meetings to pass fraudulent laws for colonized purchase and violation of usage has occurred for too many generations. You know what the people have been needing from the Water commission and to have any new settler think that should have access to water is criminal upon the states, real-estate agents and those participating in and theft. I ask that you stop with these evil plans that exhibit greed and harm to the current ecosystem and residents. Water is life and is up to the Water commission to protect these resources. Please do not pass this lease which creates harm upon harm. Stand as an example and work for a better, honest system of water sharing that Hawai'i once had.

Thank you for your time and choosing to do right, Pannelopi McKenzie

--

Blessed be your day and all that you do!

From: [DLNR.CW.DLNRCWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: [EXTERNAL] Water Use and Development Plan
Date: Thursday, September 22, 2022 8:48:30 AM

From: John Gelert
Sent: Tuesday, September 20, 2022 2:41 PM
To: DLNR.CW.DLNRCWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] Water Use and Development Plan

Dear DLNR,

I understand that the Water Use and Development Plan (WUDP) is inaccurate. It is filled with old, inaccurate data. It needs larger water conservation goals. It is insufficient to meet upcountry demand. And it overestimates water needs in west Maui.

Please do not pass the current WUDP! It needs major revisions.

Best regards,

John Gelert
Kihei, HI

From: [DLNR.CW.DLNRCWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: DO NOT APPROVE OF CURRENT DRAFT: Maui Island Water Use and Development Plan
Date: Thursday, September 22, 2022 8:54:36 AM

From: Spencer Hyde
Sent: Wednesday, September 21, 2022 8:14 AM
To: DLNR.CW.DLNRCWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] DO NOT APPROVE OF CURRENT DRAFT: Maui Island Water Use and Development Plan

Aloha,

I am writing as a citizen of Maui County to say that I do not approve of the current draft of the Maui Island Water Use and Development Plan.

There is not enough information yet on the viability and effects of using Haiku's aquifer to provide water to central Maui.

There is also a disproportionate amount of water proposed for allocation to the visitor industry as opposed to rural farmers.

This plan needs more work and more input from water conservation professionals.

Sincerely,
Spencer Hyde

From: [DLNR.CW.DLNRCWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: Maui Island Water Use and Development Plan (MIWUDP)
Date: Thursday, September 22, 2022 8:55:03 AM

From: Suzanne Lahl
Sent: Wednesday, September 21, 2022 10:45 AM
To: DLNR.CW.DLNRCWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)

Dear Commission on Water Resources Management,

I commend you for all the work you are doing on our Water Use and Development Plan for Maui.

I am asking you to revise and not approve the current draft of the MIWUDP as the plan needs to reflect the realities of our current times and show a clear, responsible pathway ahead.

To feel confident in such a CRITICAL and COMPLEX plan – the way the plan is communicated, shared, and explained is an art and a science. It requires experts who know how to tell the story in a simple, friendly and straightforward way. Especially when the topic is very complex with multiple stakeholders who have diverse needs and long term concerns. I have learned many lessons about doing this in my career as a strategic consultant and coach to leaders in all sectors of organizations.

Because we are all so connected in this tiny ecosystem – I believe the plan should be comprehensive – with all Maui water systems reviewed, data updated and future recommended actions included.

Please do not approve the plan until it is all that you and WE need it to be.

Respectfully,

Suzanne Lahl, MSOD
Kihei resident and homeowner – 21 years.

From: [DLNR.CW.DLNRCWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: Maui Island Water Use and Development Plan (MIWUDP)
Date: Monday, October 10, 2022 11:01:51 PM

From: madeleine migenes
Sent: Wednesday, September 28, 2022 10:49 AM
To: DLNR.CW.DLNRCWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] Maui Island Water Use and Development Plan (MIWUDP)

Please protect our precious water resources!

Madeleine Migenes
Haiku

From: [DLNR.CW.DLNRCWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: Maui Island Water Use Development Plan
Date: Thursday, September 22, 2022 8:54:27 AM

From: Mary Groode
Sent: Tuesday, September 20, 2022 10:16 PM
To: DLNR.CW.DLNRCWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] Maui Island Water Use Development Plan

Aloha,

I am very sure this plan needs more revisions and thought before it is passed.

Water will become more and more valuable as a resource as climate change becomes a part of our island's climate and sea waters rise.

I am very uncomfortable relying on an aquifer that we don't know enough about to supply water to South Maui.

Please vote to revise, not approve the current plan.

Thank you for your careful consideration for this important issue.

Mahalo,

Mary K. Groode

From: [DLNR.CW.DLNR.CWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: Maui's Water Future
Date: Thursday, September 22, 2022 8:54:51 AM

From: Michelle Kwik
Sent: Wednesday, September 21, 2022 9:04 AM
To: DLNR.CW.DLNR.CWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] Maui's Water Future

Aloha,

My name is Michelle Kwik. I live in Haiku on a 2.74 acreage tree farm. I am 64 and started the farm 9 years ago. My trees are all starting to produce and it is amazing. Every year I depend on the water from the county, especially since my trees are young and require watering continually. This means during drought periods I must consume county water. None of us know what global climate change will bring. We do know the needs of the local Agriculture Lands come first to feed our community. We need to figure out how much water we have underground and in reserve and how much is required yearly to sustain us. My husband was an environmental geologist in California. He used to have to measure well water and take the water out of the wells to predict how much impact it would have on the sustainability of the wells (that is to syphon off water that would be directed to another project be it housing or farming). Our first priority needs to be calculating the ground water in a scientifically proven way. During high rains I have seen flooding and massive water running into the oceans. Is there a way the water department, fire department, locals, could be trained to turn the water irrigation toward a catchment system during high flooding? Since we are an island, water and food are precious commodities, we need to spend whatever it costs to make sure we do this right. I have been told Mahi Pono is asking for way more water than there land needs. Those needs should be calculated for young tree growth and old tree growth once they mature. This should be done in a scientific way, whatever the cost. With droughts occurring often we need to make sure we have accessible water to all areas with local farms and homes having priority. Mahi Pono should not have excess water they can sell for a profit. The water of Maui has a living soul. When I was 19 I hiked Haleakala Crater thru Kaupo Gap. At the bottom of the trail my partner and I fell asleep next to the river. During the night the river

sang a beautiful lullaby to us. Her voice was pure, nurturing, strong, beautiful, and kind. The next day when we got up we both thought we had been dreaming but we both had heard the same beautiful voice and it was right next to us from the river. We were really far from anyone or any place people would have been. Her voice was the most beautiful voice either of us had ever heard. We were not on drugs. I know the river should not be sold or bought. She belongs to herself and she wants to give and provide in a healthy manner that feeds and cares for the earth, trees, plants, animals, humans and everyone. Her first priority is to the people of Maui and the land where she resides. We need to have the people of Maui, Maui County Community Water Authorities, help to oversee the different areas where the streams and rivers flow and reside so her giving waters can be respected and dispersed in a healthy way. She relies on us to do the right thing so she can nurture her ohana. We are so blessed to have her spirit/mana flowing through Maui and into our food and bodies. Lets do this right with the Maui County Community Water Authorities having oversight of the healing spirit of Maui's waters.

Kindly, Michelle Kwik

Sent from [Mail](#) for Windows

From: [DLNR.CW.DLNRCWRM](#)
To: [Kimura, Jeremy L](#)
Subject: FW: RMaui Island Water Use and Development Plan (MIWUDP)
Date: Monday, October 10, 2022 11:02:02 PM

From: madeleine migenes
Sent: Wednesday, September 28, 2022 10:51 AM
To: DLNR.CW.DLNRCWRM <dlnr.cwrn@hawaii.gov>
Subject: [EXTERNAL] RMaui Island Water Use and Development Plan (MIWUDP)

We need to REVISE before APPROVE THE PROPOSAL AT HAND.

Mahalo nui loa

THANK YOU SO MUCH

Please protect our precious water resources!

Madeleine Migenes
Haiku

ITS Sustainable Architecture

Testimony:

RE: Maui Island Water Use and Development Plan (MIWUDP)

Thank you so much for the opportunity to provide testimony on this plan. In my opinion this plan is NOT ready for approval yet. I would like to ask the Water Commission to get the County to hire a professional consultant to streamline this, make the plan clear, and **update the data**—as the other islands have done.

In looking over this date much of it is from 2007-2009 with no updated info. I don't feel like it is responsible to make a plan in 2022 based off of information this old when SO much has changed in the past decade+. As a Maui resident from birth and presently a local architect I am painfully aware of the water struggles here and feel they must be planned impeccably for a sustainable community to be possible. The stream I swam in daily as a child, the Makapipi which ALWAYS ran, even in extreme drought conditions now runs dry most days due to how much water is being taken from it.

The population in my Kula community has grown exponentially in the past decade despite the upcountry water meter list not accepting new applications for many, many years and still not fulfilling applications from decades ago. The upcountry water situation needs to be resolved - not only for the members currently on the list but for the entire area and what the water needs truly are now and will be in 20-30 years projected time lines. This area makes much more sense to develop than the shoreline area's currently able to receive meters – sea level rise is real and being at higher elevations will avoid costly catastrophe's in the future.

Last December there was nearly 3 weeks we didn't have any potable water in my kula neighborhood. We need to have a secondary county/community tank at the end of the line that can hold at least a weeks worth of potable water for the community it serves in the event that a storm like that knocks out lines again. It is not acceptable planning for schools to have to be closed and households to not have potable water for that long. Current science is clear that the '100 year' storm is now going to be coming much more

frequently as climate change influences more extreme weather patterns. Our water infrastructure and planning should be taking this reality into consideration with any long term planning.

It is also not fair that Haiku and upcountry residents are burdened with having to build wells or rely on catchment while the isthmus & south Maui communities continue to have access to meters and development – much of that water is coming from the Haiku area where local people haven't been able to get meters for 20 years! Haiku should not be part of the upcountry water list – is more infrastructure needed to do what is right by this community?

Please vote to revise this plan based upon updated, current information and to hire professionals that specialize in this specific type of planning to do so. This plan should be based on current reality and should be comprehensible to take in.

Mahalo,

‘Ilima Smallwood

Kimura, Jeremy L

From: Roth, Katie C
Sent: Thursday, February 2, 2023 1:52 PM
To: Kimura, Jeremy L
Cc: Fujii, Neal D; Ing, Nicholas S
Subject: Fw: [EXTERNAL] Request to not accept current draft of Maui's water use plan.

FYI

Katie Roth

Hydrologic Planning Program Manager
Department of Land and Natural Resources (DLNR)
C

Confidentiality Notice: This e-mail message, including any attachments, is for the sole use of the intended recipient(s) and may contain confidential and/or privileged information. Any review, use, disclosure, or distribution by unintended recipients is prohibited. If you are not the intended recipient, please contact the sender by reply e-mail and destroy all copies of the original message.

From: DLNR.CW.DLNRWORM <dlnr.cwrw@hawaii.gov>
Sent: Thursday, February 2, 2023 12:38 PM
To:
Subject: FW: [EXTERNAL] Request to not accept current draft of Maui's water use plan.

FYA.

-----Original Message-----

From:
Sent: Tuesday, January 31, 2023 5:37 PM
To: DLNR.CW.DLNRWORM <dlnr.cwrw@hawaii.gov>
Subject: [EXTERNAL] Request to not accept current draft of Maui's water use plan.

Aloha Chair Chang and State Water Commission Staff and Members- We the undersigned citizens of Maui island strongly urge you to not accept the current draft of the Maui Water Use and Development Plan submitted for your approval. The plan is difficult to understand. It's not based upon the best and most current data about viable water resources and actual water demands. It projects large demands for visitor based land use and small demands for rural farmers, which may not be realistic. It offers no clear pathway to resolve the upcountry meter list - after two decades of efforts. It sets very minimum water conservation goals, although it is clear that water conservation and efficiency will be very important as Maui's decreasing rainfall reduces water supplies. The draft Plan projects Ha'iku aquifer as the major new source of the entire central Maui's system – serving over 50 % of the island's population. It does not acknowledge how very little is known about the aquifer and its specific capacity and depth. We urge the Commission to consider turning the draft document over to a professional consultant to streamline, as all the other islands have done; refine and update data visitor and domestic water demands; and clarify recommended actions. This was what was done for the 1990 Maui WUDP.

Mahalo for your actions

Kathy Lewis

Resident/land owner, farmer, in Haiku Maui since 1980

	STRATEGY	PLANNING OBJECTIVES	ESTIMATED COST	AGENCY	TIME-FRAME	Not Begun	In Progress	Completed	Ongoing
ISLANDWIDE									
RESOURCE MANAGEMENT									
Watershed Management									
12.1	Continue Maui County financial support for watershed management partnerships' fencing, alien plant control, and weed eradication efforts.	Maintain sustainable resources Protect water resources Protect and restore streams	\$2 million per year/\$8 per watershed acre (249,362 acres).	MDWS Maui County	1				
12.2	Promote increased distribution of funding for watershed protection and active reforestation to reflect multiple values and ecosystem services.	Maintain sustainable resources Protect water resources Protect and restore streams	N/A	Private water purveyors Landowners DLNR	1				
12.3	Expand watershed protection to lower elevations below 3,000 feet.	Maintain sustainable resources Protect water resources Protect and restore streams	TBD. Funding does not come from water rates as these are not critical watershed areas that supply domestic water. These protections are classified as other eco services and are funded from the general fund, the State.	Maui County Land owners DLNR Private organizations	1				
12.4	Expand watershed protection to incorporate the ahupua'a as a whole and utilize ahupua'a resource management practices.	Maintain sustainable resources Protect water resources Protect and restore streams Protect	N/A	Public-private partnerships Aha Moku DLNR Maui County	1				
12.5	When applicable, the Department of Water Supply will advocate for mauka to makai stream connectivity and increase kalo cultivation when providing testimony to State and Federal agencies.	Maintain sustainable resources Protect water resources Protect and restore streams Protect cultural resources	N/A	MDWS	1				
			Lo'i restoration projects can start from \$50,000. Site specific.						
12.6	Enable and assist in providing Native Hawaiian water rights and cultural and traditional uses through active consultation and participation.	Protect and restore streams Protect cultural resources	N/A	CWRM	1				

EXHIBIT 5

	The County will advocate for public water trust uses, including kuleana use, cultural usage, and stream restoration when providing testimony to State and Federal agencies in addition to supporting domestic uses.			Mayor's Office					
				Maui County Corporation Counsel					
12.7	Consult with the Native Hawaiian community, including kanaka maoli, and local experts on resource management.	Maintain sustainable resources Protect water resources Minimize adverse environmental impacts	N/A	MDWS	1				
	Establish water representative of each Moku, create advisory role, and a partnership.			Council					
	Policies and strategies recommended by those being consulted should take priority during plan implementation.			Aha Moku					
12.8	Use scientific studies to support decision making in tandem with local traditional Native Hawaiian empirical data and observations.	Maintain sustainable resources Protect water resources Minimize adverse environmental impacts	N/A	MDWS	1				
	Study hydrogeologic and ecological conditions and increase monitoring to create timely and more accurate data for decision making.			Council					
			Adopt policies to incorporate traditional Native Hawaiian knowledge of an area combined with scientific studies.	Aha Moku					
				USGS					
12.9	Actively seek 'ike kūpuna generational knowledge along with scientific data.	Maintain sustainable resources Protect water resources Protect	N/A	MDWS	1				
12.10	Establish and maintain regular communication with Aha Moku Councils to assess the effect of water development and water development policies on kanaka maoli rights and Hawaiian culture and practices. Actively seek input from those practicing their culture and those with historical knowledge. Create an advisory group by ordinance to address these policies and provide accountability.	Maintain sustainable resources Protect water resources Protect and restore streams Protect cultural resources Minimize adverse environmental impacts	N/A	MDWS	1				
				Council					

12.11	Provide training for MDWS employees on traditional Hawaiian resource management, including ahupua'a resource management strategies, importance of ecosystem health, ability to create additional water through resource management, nearshore and stream ecosystems, public trust responsibilities, kanawai policies, and connection between water and Hawaiian culture and spirituality (mo'o).	Maintain sustainable resources Protect water resources	TBD	MDWS	1				
		Protect and restore streams							
12.12	Use drought conditions as a baseline to evaluate water supply and effects of water use to the extent practical.	Maintain sustainable resources Protect water resources Minimize	N/A	MDWS	1				
12.13	Quantify the impact of watershed management on groundwater recharge and distribute funding proportionately. DWS initiated a study by USGS to quantify hydrologic impact from watershed mgt and restoration. The complexity of the question proposed that USGS expand research to a statewide level.	Maintain sustainable resources Protect water resources	\$160,000 for USGS study.	MDWS	1				
	Prioritize efforts by impact, expand funding from private purveyors, State and other beneficiaries.			USGS					
				Private water purveyors					
				CWRM					
12.14	Improve groundwater and surface water resources and diversion monitoring by CWRM. Encourage CWRM to enforce. Provide stream monitoring gauges for streams. Act as ombudsman for stream users who report non-compliance.	Maintain sustainable resources Protect water resources	N/A	MDWS	1				
	Adopt water permit condition and policies that require system owners to install stream monitors and allow access to the property to facilitate monitoring and stream standards enforcement.			Maui County					
12.15	Restrict land uses with high risk of well contamination near drinking wells	Protect water resources	N/A	Council	1				
	Note: Within the proposed regulated areas, the proposed Wellhead Protection Ordinance would allow the following located more than 50 feet from wells or well fields that supply public water systems: a lot or facility (other than an aquatic animal production facility) where animals will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period, and where crops, vegetation forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility (excludes pasture).	Minimize adverse environmental impacts							
	Develop and adopt well head protection ordinance.								

12.16	Protect and recharge groundwater during non-drought periods to stabilize supply.	Maintain sustainable resources	N/A	MDWS	1				
	Reduce pumping, increased surface water use after public trust uses are met, aggressive conservation, and alternative sources.	Protect water resources Minimize adverse environmental impacts							
12.17	No new stream diversions for non-instream uses until interim flow standards are adopted.	Maintain sustainable resources Protect water resources Minimize adverse environmental impacts	N/A	MDWS	1				
	(Could extend to no new diversion or increased diversion).			CWRM					
				DLNR					
12.80	Stream restoration agricultural water returned to stream as much as is practical.	Maintain sustainable resources Protect water resources Minimize adverse environmental impacts	N/A	MDWS	1				
	(Decrease agricultural use of streams).			CWRM					
12.19	Increase use of surface water for municipal affordable housing needs during wet season when all public trust uses are satisfied, including kuleana and traditional and cultural users.	Manage water equitably	N/A	Maui County	1				
	(Expand treatment facilities and obtain reservoirs. Consider permitting and dam liability issues.)	Reflect Mayor's policy and upcoming codification of water allocation for additional municipal water allocation based on Na Wai 'Ehā CWRM ruling							
12.20	When adopted IFS for protected kuleana and instream uses have been satisfied, then support water transport for affordable housing use.	Manage water equitably	N/A	Maui County	1				
	Support diversified ag economy with low cost untreated source.	Reflect Mayor's policy and upcoming codification of water allocation for additional municipal water allocation based on Na Wai 'Ehā CWRM ruling							
12.21	Increase County oversight of well drilling in non-designated groundwater management areas.	Maintain sustainable resources Protect water resources Protect and restore streams	Adopt ordinance	MDWS	1,2				
	Encourage CWRM to increase the analysis of well permits, including spatial distribution and evaluation of well impacts on the quantity and quality of nearby water resources.			Council					
	Affirm the County's commitment to exercise its ability to comment on all well permits in Maui County, including both public and private, on behalf of cultural users and local communities.		Provide funding for oversight and well surveys	Mayor's Office					
	Amend State law to grant the County the authority to undertake a larger role in the well permit process.	Minimize adverse environmental impacts		CWRM					

	Require consultation with local Native Hawaiians as part of the oversight process.								
12.22	Protect dry native forests and wetlands. Provide funding for management and develop and adopt ordinances to protect these areas.	Maintain sustainable resources Minimize adverse environmental impacts	TBD	MDWS	1				
				Council					
12.23	Keep stormwater drainage in same area for aquifer recharge. Develop and adopt an ordinance	Maintain sustainable resources Protect water resources Protect and restore streams Minimize adverse environmental impacts	N/A	MDPW	1				
				Council					
12.24	Prohibit infilling of wetland areas. Develop and adopt an ordinance to that effect.	Maintain sustainable resources Protect water resources Protect and restore streams Minimize adverse environmental impacts	N/A	Council	1				
12.25	Protect undergroundwater by:	Maintain sustainable resources Protect water resources Minimize adverse environmental impacts	TBD	CWRM	1				
	1. Improving the blasting permit process and ensuring mitigation to protect cultural impacts			Council					
	2. Surveying private well users to investigate water being taken from aquifers								
	3. Providing more oversight over private well users.								
12.26	Request notification to kuleana water users and neighboring property owners when well permits are applied for.	Maintain sustainable resources Protect water resources Protect cultural resources Minimize adverse environmental impacts	N/A	CWRM	1				
12.27	Encourage and assist with CWRM enforcement of IIFS and IFS, to the extent possible. If policies are being set based upon unenforced standards, then not enough water will be available.	Maintain sustainable resources Protect water resources Protect and restore streams Protect cultural resources Minimize adverse environmental impacts	N/A	MDWS	1				
				Mayor's Office					
				Aha Moku					
				Local community members					
				Council					
12.28	Provide stream monitors for all streams to ensure accurate data is being used in decision making and as an enforcement mechanism. Prioritize streams listed under the USGS.	Maintain sustainable resources Protect water resources Protect and restore streams Minimize adverse environmental impacts	\$24,000 - \$40,000 per stream.	MDWS	1, 2				
				USGS					

12.29	Encourage CWRM to accept volunteer assistance from a qualified community task force for enforcement of IIFS and IFS in areas where needed. This includes working with community members to set up a process to qualify a community task force.	Minimize adverse environmental impacts Protect water resources	N/A	CWRM	1				
				Qualified community task					
Water Quality Management									
12.30	Implement well siting criteria to avoid contaminated groundwater supplies and unnecessary risks to public health.	Maximize water quality	Potentially increased pumping costs for higher elevation wells. Site specific.	MDWS	1				
				Public Water Systems					
12.31	Adopt wellhead protection measures for potable wells.	Protect water resources Maximize water quality	DOH grant funded public outreach and research	MDWS	1				
				Maui County					
12.32	Educate the farming community in sustainable farming practices to reduce negative impacts from agricultural practices on water resources.	Protect water resources Maximize water quality	Outreach within multiple agency budgets. From \$5,000 annually.	DOA	1				
				DOH					
				MDWS					
				HRWA					
				SWCD					
12.33	Update assessment of potential contaminating activities around drinking water supply and support increased monitoring of potable wells as needed.	Maximize water quality	\$10,000 - \$20,000, five-year updates.	Maui County	1				
				MDWS					
12.34	Explore options to replace the use of chloramines in the Upcountry water system.	Maximize water quality	TBD	MDWS	1				
				Council					
Conservation – Demand Side									
12.35	Retrofits/direct installation and sub-metering programs, distribution of water-efficient fixtures and retrofits for existing users and facilities	Maintain sustainable resources Maximize efficiency of water use Minimize cost of water supply	MDWS ongoing and pilot programs. \$108,000 year 1 – 3.	MDWS	1				
12.36	Smart meters retrofits.	Maintain sustainable resources Maximize efficiency of water use	Depends on existing meters and model, conversion from	Private water purveyors	2				
				MDWS					
12.37	Landscaping and irrigation system incentives and requirements, targeting dry areas.	Maintain sustainable resources	\$245,000 annually for incentives,	Maui County Parks Dept.					
		Maximize efficiency of water use	\$0 for requirements.	MDWS	1				

	Incentivize turf removal policies. Require low impact project design for on-site water retention, such as xeriscaping improvements rebate, irrigation controllers, residential greywater program, permeable surfaces with required maintenance and native and climate change adaptable plant use.	Minimize cost of water supply Manage water equitably		County Council					
				Planning Dept.					
				Planning Commissions					
12.38	Public information and education: sustainability working group; technology/innovation transfer programs; recognition program; public events; participation in recognized Federal and industry programs (such as WaterSense); advertising	Maintain sustainable resources Maximize efficiency of water use Minimize cost of water supply	MDWS ongoing programs. \$50,000 annually.	MDWS	1				
				HRWA					
				Public Water Systems					
12.39	Landscaping guidelines, audit and retrofit, landscape Ordinance.	Maintain sustainable resources Maximize efficiency of water use Minimize cost of water supply	Staff time. Retrofit depends on audit.	MDWS	1				
12.40	Market/customer surveys followed by rebates and incentives: high efficiency fixtures, washing machines, toilets and urinals; hotel awards program	Maintain sustainable resources Maximize efficiency of water use Minimize cost of water supply	\$70,000 annually (excluding outdoor incentives).	MDWS	1				
12.41	Revise Maui County Code to require high efficiency fixtures in all new construction.	Maintain sustainable resources Maximize efficiency of water use Minimize cost of water supply Manage water equitably	N/A	Maui County	1				
	Develop a comprehensive water conservation Ordinance to include xeriscaping regulations.			MDWS					
	Water efficient home: estimated added construction cost \$25,000 (6 percent increase in property value).			County Council					
	LEED certified home: estimated. added construction cost \$86,000 (18 percent increase in property value).								
12.42	Aggressive tiered rate structure based on audit and rate study.	Maintain sustainable resources Maximize efficiency of water use Minimize cost of water supply Manage water equitably	N/A	Maui County	1				
	Create a new water user category for hotels and resorts with a tiered fee structure that promotes water conservation by increasing the cost for the highest tier.			MDWS					
	Meet with other high water users to determine if high use is due to need or if system repairs are needed. Develop strategies for encouraging the repair of water leaks for high water users.								

12.43	Agricultural programs: irrigation efficiency audits, technical assistance, rebates, technical working groups.	Maintain sustainable resources Maximize efficiency of water use Minimize cost of water supply	Outreach within multiple agency budgets. From \$10,000 annually.	DOA	1				
				DOH					
				MDWS					
				HRWA					
				SWCD					
12.44	Greywater incentives.	Maintain sustainable resources Maximize efficiency of water use	MDWS 2year pilot program. \$80,000.	Maui County	2				
				MDWS					
12.45	Encourage rainwater catchment for irrigation, including through education and outreach.	Maintain sustainable resources Maximize efficiency of water use	N/A	DOH	1				
				Private water purveyors					
				Maui County					
12.46	Revise Maui County Code and/or provide incentives: water conserving design and landscaping in new development (such as xeriscaping that targets dry areas), and water efficient irrigation systems	Maintain sustainable resources Maximize efficiency of water use Minimize cost of water supply Manage water equitably	N/A	Maui County	1, 2				
12.47	Revise Maui County Code and/or provide incentives: water efficient building design integrating alternative sources (such as greywater or catchment).	Maintain sustainable resources Maximize efficiency of water use Minimize cost of water supply Manage water equitably	N/A	Maui County	2				
12.48	Restrict outdoor water waste: <u>disallow overspray and runoff</u> , water wasting, and <u>require</u> hose nozzles.	Maintain sustainable resources Maximize efficiency of water use Minimize cost of water supply	N/A	Maui County	2				
	Address watering behaviors with education and outreach.			MDWS drought rules					
12.49	Create measurable conservation policies for all areas at all times.	Maintain sustainable resources Maximize efficiency of water use	N/A	Maui County	1				
				MDWS water shortage rules					
				Council					
12.50	"Lead by Example" conservation and efficiency projects.	Maintain sustainable resources Maximize efficiency of water use	N/A	MDWS	2				
				Maui County Parks Dept.					
12.51	Require WaterSense (efficiency) standard for new development and existing retrofits.	Maximize efficiency of water use	N/A	MDWS	1,2 2				
	Amend Maui County Code			County Council					
12.52	Require water conservation landscape measures for resorts, golf courses, and public facilities.	Maximize efficiency of water use	N/A	MDWS	1				
	Amend Maui County Code			County Council					
Conservation – Supply Side									

12.53	Perform annual comprehensive water audits.	Maximize efficiency of water use Minimize cost of water supply	Staff costs only, free software and training.	MDWS	1				
				Public Water Systems					
12.54	Fund and implement a continuous leak detection program.	Maximize efficiency of water use Minimize cost of water supply	From \$100,000 annually.	MDWS	1				
				Large Public Water Systems					
12.55	Maintain and operate the water system to minimize the sources of water loss.	Maximize efficiency of water use Minimize cost of water supply	N/A	MDWS	1				
				Private water purveyors					
12.56	Reduce water loss of potable and non-potable systems.	Maximize efficiency of water use	N/A	Maui County	1, 2				
	Implement and advocate for surface water efficiency programs, such as improvements to diversions, conveyances, storage, and meters to reduce water loss. Line or reline leaking reservoirs and ditches.			MDWS					
				Private purveyors					
				CWRM					
Conservation – Agricultural Uses									
12.57	Research, support, and use less water consumptive crops and climate adapted crops.	Maintain sustainable resources Maximize efficiency of water use Manage water equitably	N/A	DOA	2				
12.58	Improve irrigation management and efficiency.	Maintain sustainable resources Maximize efficiency of water use	N/A	UH CTAHR	2				
				USDA					
				SWCD					
				Hawai'i Farm Bureau Hawai'i Organic Farmers					
12.59	Maintain the integrity of plantation irrigation systems including reservoirs.	Maximize efficiency of water use Provide for agricultural needs	N/A	Public-private partnerships (EMI, MLP, WWC, West Maui Land)	2				
				Maui County					
				DLNR					
				DOA					
12.60	Augment agricultural water supplies with alternative resources.	Maintain sustainable resources Manage water equitably Provide		MDPW	2				
				DLNR					

12.61	Require non-potable and R-1 water use for agriculture where available and appropriate (such as north Kihei Bayer fields).	Maintain sustainable resources	N/A	MDWS	1				
	Adopt Ordinance.			Council					
				MDEM					
Conservation – Energy									
12.62	Pursue comprehensive energy management.	Minimize adverse environmental impacts Minimize cost of water	N/A	MDWS	1				
				Public Water Systems					
				Maui County Energy Management Program					
12.63	Increase energy efficiency and improve load management.	Minimize adverse environmental impacts Minimize cost of water	Currently being assessed.	MDWS	2				
				Public Water Systems					
				Maui County Energy Management Program					
12.64	Increase alternative energy generation and use.	Minimize adverse environmental impacts	N/A	MDWS	2				
				Public Water Systems					
				Maui County Energy Management Program					
CONVENTIONAL WATER SOURCE									
12.65	Support collaborative hydrogeological studies of impacts from climate change and future well development on groundwater health.	Maintain sustainable resources Protect water resources	From \$600,000, joint funding. Site and resource specific.	CWRM	1				
				MDWS					
				Public Water Systems					
				USGS					
12.66	Develop groundwater within sustainable yield to provide sufficient supply for growth, maintaining a buffer to account for potential future drought impact and prospective adjustments in aquifers lacking hydrologic studies.	Maintain sustainable resources Maximize reliability of water service	Site specific, see regional sectors.	CWRM	1				
				MDWS					
				Private water purveyors					

12.67	Promote the highest quality water for the highest end use.	Manage water equitably	N/A	CWRM	1				
				MDWS					
				Private water purveyors					
12.68	Protect and prioritize public trust uses in allocating groundwater in regions of limited resources and conflicting needs.	Manage water equitably Provide for Department of Hawaiian Home Lands needs	N/A	CWRM	1				
				MDWS					
				DHHL					
12.69	Increase monitoring of groundwater sources to assess and reduce seawater intrusion and chloride levels in potable and non-potable wells throughout developed aquifers.	Maintain sustainable resources Minimize adverse environmental impacts	From \$50,000 annually. Site specific.	CWRM	2				
				USGS					
12.70	Promote well siting and distribution strategies for all public water systems to ensure optimal spacing and withdrawals for aquifer health and equitable use.	Maintain sustainable resources Manage water equitably	N/A	CWRM	2				
				Maui County					
				MDWS					
				Private water purveyors					
12.71	Formalize demand response plans for water purveyors that address water shortage and aquifer changes.	Maintain sustainable resources Maximize reliability of water service	None	CWRM	2				
				MDWS					
				Private water purveyors					
12.72	Develop a water availability rule to provide certainty in land use planning and ensure that reliable source and infrastructure capacity is provided within a reasonable time for planned growth.	Maximize reliability of water service Maintain consistency with General and Community Plans	None	Maui County	2				
				MDWS					
12.73	Increase system flexibility so that regional sources can be moved to support areas of need, both within the municipal systems and between regional public water systems.	Maximize reliability of water service Maximize efficiency of water use	See regional sectors.	MDWS	2				
12.74	Ensure that public/private groundwater development agreements reflect the public trust needs and are in keeping with the water allocation priorities of the MIP.	Maximize reliability of water service Manage water equitably Maintain consistency with General and	N/A	Maui County	2				

				MDWS					
				Public Water Systems					
12.75	Develop groundwater to maximize reliability of potable supply and as contingency in areas currently dependent on surface water.	Maximize reliability of water service	See regional sectors.	MDWS	2				
				Public Water Systems					
12.76	Diversify supply for agricultural use to increase reliability.	Provide for agricultural needs Maximize reliability of water	See regional sectors.	DOA	2				
				Maui County					
				Private water purveyors					
12.77	Encourage CWRM to prioritize establishing IFS for diverted streams with potential conflicting uses.	Protect and restore streams Minimize adverse environmental	N/A	CWRM	2				
12.78	Defer any new surface water diversions to meet new projected demand.	Protect and restore streams Protect cultural resources	N/A	CWRM	1				
				Maui County					
12.79	Balance existing diversions with alternative sources for agriculture to mitigate low-flow stream conditions.	Provide for agricultural needs Maximize reliability of water service	N/A	DOA	2				
				Maui County					
				Private water purveyors					
12.80	Maximize efficiencies in surface water transmission, distribution, and storage.	Maximize efficiency of water use	N/A	Private water purveyors (EMI, MLP, WWC, West Maui Land)	2				
12.81	Add raw water storage to increase reliable supply once instream flow standards are established.	Maximize reliability of water service	See regional sectors.	MDWS	2				
12.82	Increase treatment plant capacity at water treatment plant facilities to accommodate additional treatment in wet season.	Maximize reliability of water service Minimize cost of water supply	See regional sectors.	MDWS	2				
12.83	Support plans and programs to develop additional sources of water for irrigation purposes.	Provide for agricultural needs Maximize reliability of water	See regional sectors.	DOA	1				
				Maui County					
				Private water purveyors					

12.84	Prioritize delivery and use of agricultural water within County agricultural parks for cultivation of food crops for local consumption.	Provide for agricultural needs Maximize reliability of water service	N/A	Maui County	2				
				EMI					
				MDWS					
12.85	Regional basal well development:	Maintain sustainable resources Manage water equitably Protect cultural resources Minimize adverse environmental impacts	TBD	MDWS	1				
	1. Require studies to show adequate capacity to meet cultural uses, kuleana uses, stream restoration, resident, and agricultural needs within the area prior to transport.								
	2. Outreach to cultural users to survey their water needs and establish their water usage based upon needs, not actual usage. Many streams are dry due to diversions which hamper cultural usage; with additional water, cultural usage will increase.)								
	3. Assess well capacity and number of wells needed and perform cost-benefit analysis.								
	4. Require surveys of private wells to increase accuracy of aquifer withdrawal rates.								
	5. Maintain a buffer to sustainable yield.								
	6. Require USGS studies of the interaction between ground and surface water and potential impacts from pumping prior to funding well development.								
12.86	Develop and maintain back up wells even if more expensive to mitigate drought, equipment failure, chlorides or other source or supply problems and avoid use restrictions.	Maximize efficiency of water use Maximize reliability of water service	TBD	MDWS	1				
	Consider and discuss utilizing existing private wells with unused capacity during drought emergencies by mutual agreement of the parties.								
12.87	Diversify to the most cost-effective combination of groundwater, surface water, and aggressive conservation with some temporary cutbacks acceptable during drought and equipment failure.	Maximize efficiency of water use Maximize reliability of water service	No costs associated.	MDWS	2				
12.88	Require private public systems to develop in a manner that facilitates potential connection to the Maui DWS system or integrated management.	Maximize reliability of water service	N/A	MDWS	1				
	Amend Maui County Code			Council					
				Private water system owners					

12.89	Increase connection between Maui DWS subdistricts.	Maximize reliability of water service	TBD	MDWS	1				
12.90	Maintain and manage plantation ditch systems for continued potable and non-potable water conveyance. Explore cost of investing in existing system, resolving ownership issues, and management issues.	Maximize reliability of water service	TBD		1				
12.91	Research land title when acquiring property for water system use or development to ensure lands were legally transferred to current owner.	Manage water equitably Protect cultural resources	N/A	MDWS	1				
				Managing Director's Office/Principal Archeologist					
				Corporation Counsel					
12.92	Conduct study of water system ownership and management models, such as water authority and public company.	Manage water equitably Maximize efficiency of water use	\$50,000 - \$100,000.	MDWS	2				
				Council					
				Mayor					
ALTERNATIVE WATER SOURCE									
12.93	Expand requirement for new development to connect to recycled water infrastructure if practical.	Protect water resources	N/A	Maui County	2				
		Maintain consistency with General and Community Plans							
12.94	Promote closer collaboration between MDWS and MDEM to master plan and utilize DWSRF funding to maximize recycled water use.	Maximize efficiency of water use,	N/A	Maui County	2				
		Maintain consistency with General and Community Plans		MDEM					
				MDWS					
12.95	Explore expansion of "scalping plants" (small-scale membrane filter systems that put effluent closer to reuse locations) in designated growth areas.	Maximize efficiency of water use, Maintain consistency with General and Community Plans	N/A	MDEM	2				
12.96	Inform and educate the residential and commercial community of easy, affordable rainfall catchment for recharge and garden use.	Protect water resources	Outreach within multiple agency budgets. From \$5,000 annually.	DOH	2				
				MDWS					

12.97	Provide incentives for residential or commercial rainwater catchment systems. Evaluate water quality issues prior to adoption of strategy. Allow water catchment systems on properties with water meters, provided there is no connection between the two.	Protect water resources	MDWS pilot program \$45,000 over 2 years.	MDWS	2				
		Maintain consistency with General and Community Plans							
12.98	Explore and promote opportunities for large volume stormwater runoff for agricultural irrigation.	Provide for agricultural needs	N/A	DLNR	2				
	Capture flash supply as raw water storage for treatment or utilize reservoirs to store irrigation supply for diverse agriculture.			DOA					
				MDPW					
12.99	Explore a program to use small greywater systems for small residential and commercial development use.	Maximize reliability of water service	N/A	MDWS	1				
			Amend State and possibly County regulations.	Council					
				DOH for commercial					

	STRATEGY	PLANNING OBJECTIVES	ESTIMATED COST	AGENCY	TIME-FRAME	Not Begun	In Progress	Completed	Ongoing
WAILUKU									
RESOURCE MANAGEMENT									
14.1	Continue Maui County financial support for watershed management partnerships' fencing and weed eradication efforts.	Maintain sustainable resources	\$1.1M to \$1.7M - per year (from all funding sources)	MDWS	1				
		Protect water resources		Maui County					
		Protect and restore streams							
14.2	Establish a diverse working group to address alternative structures for future management of the watershed lands and sustained operations of the WWC ditch system	Maintain sustainable resources	N/A	Aha Moku	1				
		Protect water resources		Hui O Nā Wai 'Ehā					
		Protect and restore streams		OHA					
				Maui County Wailuku Water Company					
CONVENTIONAL WATER SOURCE STRATEGIES									
14.3	Adapt pumpage of constructed wells in Waikapū Aquifer with guidance from the 2015 USGS groundwater flow model results, when available.	Provide adequate volume of water supply	\$4.25* /1,000 gallons	MDWS	1, 2				
		Maximize reliability of water service		Waikapū Properties LLC					
		Minimize adverse environmental impacts		USGS					
		Minimize cost of water supply							
14.4	Explore new basal well development in the southern portion of Waihe'e aquifer based on results of USGS groundwater model and best pumping scenarios. Monitor impact on existing production wells and aquifer transition zone from development of Mendez wells.	Provide adequate volume of water supply	N/A (costs only assessed for northern portion of aquifer)	MDWS	1				
		Maximize reliability of water service							
		Minimize adverse environmental impacts							
		Minimize cost of water supply							
14.5	Continue exploration of East Maui well development in consideration of reliable capacity for planned growth areas, including the MDWS Central Maui System. Initiate a hydrologic study to determine any negative impact on existing ground and surface water sources, streamflow and influences from dikes.	Maintain sustainable resources	\$3.71*/1000 gallons	CWRM	1				
		Provide adequate volume of water supply		USGS					
		Maximize reliability of water service		MDWS					
		Minimize adverse environmental impacts							
	Minimize cost of water supply								
14.6	Reduce non-potable use of Wailuku Aquifer Sector basal and high level water to the extent feasible. Prioritize available recycled water and brackish water for non-potable uses where available in the Central Aquifer Sector.	Maximize water quality		CWRM					
		Manage water equitably		MDWS					
		Maintain consistency with General and Community Plans		MDEM					
				MDP					
14.7	Monitor outcome of the East Maui Streams contested case and final Instream Flow Standards, available ditch flow and water quality implications of blending the water source to determine benefits and viability of interconnecting the MDWS Central Maui and Upcountry Systems.	Maximize reliability of water service	N/A	MDWS	2				
		Maximize efficiency of water use							
		Minimize cost of water supply							
ALTERNATIVE WATER SOURCE STRATEGIES									
14.8	2. Expand distribution from the Kahului WWTF for commercial, landscape and other non-potable irrigation applications.	Maximize efficiency of water use	\$6.7M	MDEM	1 2				
		Maintain consistency with General and Community Plans							

14.9	3. Identify private-public partnerships, state and federal funding sources to maximize utilization of recycled water produced at the Kihei WWTF and supplemental non-potable sources for seasonal use of R-1 water.	Maximize efficiency of water use	(Transmission South Kihei to Wailea \$21M)	MDEM	12				
		Maintain consistency with General and Community Plans		MDWS					
14.10	Explore the Wai'ale Road Stormwater Drainage as potential to offset stream diversions associated with Spreckels and Waihe'e Ditches and supplement irrigation sources for agricultural water demands in Central Maui.	Minimize adverse environmental impacts	\$10.0M	DPW	2				
		Maximize efficiency of water use		DOA					
		Maintain sustainable resources		HC&S					

	STRATEGY	PLANNING OBJECTIVES	ESTIMATED COST	AGENCY	TIME-FRAME	Not Begun	In Progress	Completed	Ongoing
CENTRAL									
RESOURCE MANAGEMENT									
15.1	Explore funding and conduct a cost benefit analysis of improvements to the EMI non-potable conveyance system to mitigate losses and preserve existing reservoirs at risk of decommissioning.	Maintain sustainable resources	N/A	Maui County	1,2				
		Protect water resources							
		Protect and restore streams		A&B Properties/EMI					
		Maximize efficiency of water use							
		Minimize adverse environmental impacts							
CONVENTIONAL WATER SOURCE STRATEGIES									
15.2	Assess alternative options to restructure and process the existing Upcountry Meter Priority List to improve processing rate and adequate source development.	Provide adequate volume of water supply	N/A	MDWS	1,2				
		Maximize reliability of water service							
15.3	Explore new basal well development in the Makawao Aquifer to accommodate growth Upcountry and add reliable new source. Potential yield is up to 3 mgd.	Provide adequate volume of water supply	\$4.5 – 6.0 /1000 gallons	MDWS	1,2				
		Maximize reliability of water service		DLNR					
		Minimize adverse environmental impacts		Public/ private partnerships					
15.4	Explore East Maui well development in combination with Makawao Aquifer basal groundwater to meet projected demand on the MDWS Upcountry System. Initiate a hydrologic study to determine any negative impact on existing ground and surface water sources, stream flow and influences from dikes. Potential yield is > 6 mgd.	Provide adequate volume of water supply	\$3.71* /1000 gallons	CWRM	1,2				
		Maximize reliability of water service		MDWS					
		Minimize adverse environmental impacts		USGS					
15.5	Explore Pā'ia Aquifer for non-potable demand, and potable use with additional treatment as necessary to serve projects included in the Maui Island Plan that cannot feasibly be serviced by MDWS source and infrastructure. Estimated demand for the Maui High School Campus is about 0.75 mgd.	Provide adequate volume of water supply	N/A	Maui County	1,2				
		Maximize reliability of water service							
15.6	Execute a long-term source agreement for use and maintenance of the Wailoa Ditch that ensures adequate non-potable supply for the Kula Agricultural Park expansion and potable supply for projected MDWS Upcountry System needs over the planning period.	Provide adequate volume of water supply	N/A	Maui County MDWS					
		Maximize reliability of water service							
				A&B Properties					
15.7	1. Pursue hydrologic studies needed to explore the Ha'ikū Aquifer and an updated ditch flow analysis to optimize raw water storage and treatment plant capacity at Kamole Weir in order to expedite the most feasible new source. Surface water strategies are contingent on a long-term agreement with A&B Properties allocating adequate surface water for the MDWS Upcountry System.	Minimize cost of water supply	Surface water \$5.15 /1000 gal (20 yr)	MDWS	1,2				
		Provide adequate volume of water supply	(construction cost \$50M, Operational \$1.47/1000 gal)						
		Maximize reliability of water service							
			Groundwater \$3.71/1000 gal						
		Maintain consistency with General and Community Plans							
ALTERNATIVE WATER SOURCE STRATEGIES									

15.8	2. Consider alternative sources of irrigation water including wastewater reuse, recycled stormwater runoff, and brackish well water in land use permitting to mitigate low flow stream conditions. Require alternative sources for irrigation when reasonably available in county discretionary land use permitting.	Maintain sustainable resources	N/A	Maui County	1,2				
		Protect and restore streams							
		Minimize adverse environmental impacts		DEM					
		Maximize efficiency of water use		Mahi Pono					
		Maintain consistency with General and Community Plans							
15.9	3. Expand distribution from the Kahului WWTF for commercial, landscape and other non-potable irrigation applications. Potential available recycled water is 4.2 mgd.	Maximize efficiency of water use	\$6.7M	MDEM	1,2				
		Maintain consistency with General and Community Plans							
15.10	MDWS and MDEM collaborate to identify private-public partnerships, state, and federal funding sources to maximize utilization of recycled water produced at the Kihei WWTF and supplemental non-potable sources for seasonal use of R-1 water.	Maximize efficiency of water use	(Transmission South Kihei to Wailea \$21M)	MDEM	1,2				
		Maintain consistency with General and Community Plans		MDWS					

	STRATEGY	PLANNING OBJECTIVES	ESTIMATED COST	AGENCY	TIME-FRAME	Not Begun	In Progress	Completed	Ongoing
KO'OLAU									
RESOURCE MANAGEMENT									
16.1	Seek dedicated, long-term and broad based core funding for maintaining and expanding watershed protection areas and providing for watershed maintenance in East Maui and Hāna watersheds for habitat protection and water security.	Maintain sustainable resources.	\$0.8M – \$1M per year	MDWS	1				
		Protect water resources		Maui County					
		Protect and restore streams		CWRM					
				DLNR					
16.2	Support and promote community grassroots initiatives to collaborate with state and land owner partnerships to increase participation in natural resource management and to ensure adequate access and opportunities for traditional uses of the region's natural resources. Use established moku process to consult on resource management	Maintain sustainable resources	N/A	Public-private partnerships	1				
		Protect water resources.		Aha Moku					
		Protect and restore streams		DLNR					
				Maui County					
16.3	Support collaborative hydrogeological studies to inform impact from climate change and future well development on groundwater health for Ha'ikū and Honopou Aquifers. Support additional hydrological studies to improve recharge estimates to include the best available information in establishing sustainable yield.	Maintain sustainable resources.		CWRM	2				
		Protect water resources.		USGS					
		Protect and restore streams.		MDWS					
16.4	Convene sector-based drought workshops to assist stakeholders in developing or improving their individual drought/water conservation plans. Focus in the Ko'olau Sector should be on catchment systems and contingency supply to supplement or substitute catchment when necessary.	Provide adequate volume of water supply.	\$50K/year	CWRM	2				
		Maximize reliability of water service.		NRWA					
16.5	Add steam gauges in streams to ensure adequate decision making data is captured prior to any decision making in an area Aquifer or stream.	Maintain sustainable resources.	Need data to determine costs	CWRM	1				
		Protect water resources.		USGS					
		Protect and restore streams.							
		Maximize reliability of water service.							
16.6	Determination of legal ownership of all aspects of the EMI Water Delivery System	Good governance	N/A	Office of the Managing Director	1				
	(from TIG Report)	Manage water equitably	use new position created Principal archeologist assistant						
16.7	Conduct an engineering report and cost analysis of the current EMI Delivery system.	Maximize reliability of water service.	\$50-100,000	Mayor's Office	1				
	(from TIG Report)			Office of the Managing Director County Council					
16.8	Conduct a study to determine the annual costs of maintaining the EMI System; including an assessment of liability issues.	Good governance	\$50-100,000	Mayor's Office	1				
	(from TIG Report)	Maximize reliability of water service.		Office of the Managing Director County Council					
16.9	Conduct a study of the potential revenues based on domestic water and agricultural water sales.	Good governance	\$50-100,000	Mayor's Office	1				
	(from TIG Report)	Maximize reliability of water service.		Office of the Managing Director County Council					
16.10	Evaluate policy of relying upon A&B/Mahi Pono water leases to provide county domestic water. Private system owner with stakeholders may require water sold at market rates to the county.	Good governance	\$50-100,000	Mayor's Office	1				

	(from TIG Report)	Maximize reliability of water service.		Office of the Managing Director					
		Manage water equitably		County Council					
16.11	Conduct a study on feasibility of county obtaining water lease for domestic water, as well as the county acquiring system and developing a community based model (water authority, public company models) to ensure adequate water provided for community needs.	Good governance	\$50-100,000	Mayor's Office	1				
	(from TIG Report)	Maximize reliability of water service.		Office of the Managing Director					
		Manage water equitably		County Council					
16.12	Evaluate a policy and state legislation creating home rule for water related matters, including the granting of water leases for waters located in Maui County.	Good governance	N/A	Mayor's office	1				
		Maximize reliability of water service.		Office of Managing Director					
				Corporation Counsel					

	STRATEGY	PLANNING OBJECTIVES	ESTIMATED COST	AGENCY	TIME-FRAME	Not Begun	In Progress	Completed	Ongoing
HANA									
RESOURCE MANAGEMENT									
# # # # # #	Seek dedicated, long-term and broad based core funding for maintaining and expanding watershed protection areas and providing for watershed maintenance in East Maui and Hāna watersheds for habitat protection and water security.	Maintain sustainable resources Protect water resources Protect and restore streams	\$0.8M – \$1M per year	MDWS Maui County CWRM DLNR	1				
# # # # # #	Support and promote community grassroots initiatives to collaborate with state and land owner partnerships to increase participation in natural resource management and to ensure adequate access and opportunities for traditional uses of the region's natural resources. Use established moku process to consult on resource management	Maintain sustainable resources Protect water resources Protect and restore streams	N/A	Public-private partnerships Aha Moku DLNR Maui County	1				
CONVENTIONAL WATER SOURCE STRATEGIES									
# # # # # #	Complete optimization studies/source development analysis for the MDWS Hāna subsystem (PWS 217) in order to assess basal well development needs by 2025. Costs of regional well development is not assessed. Compare to 20 year life cycle costs estimated for Haiku/Central well development	Provide adequate volume of water supply Maximize reliability of water service Minimize adverse environmental impacts Provide for DHHL needs	\$3.55 per 1,000 gallons	MDWS DHHL	2				
# # # # # #	The Commission on Water Resource Management to establish Instream Flow Standards on a stream-by-stream basis to protect the public interests of the Hāna aquifer sector. Recognizing that other regions with competing off-stream needs must be prioritized, this strategy is proposed as a medium to long-term implementation time frame. Assure that the Hana aquifer sector area kuleana, cultural, domestic, and agricultural needs are met prior to allowing water leave the region.	Protect and restore streams Protect cultural resources Maintain sustainable resources Protect water resources	N/A	CWRM USGS	2				
# # # # # #	Convene sector-based drought workshops to assist stakeholders in developing or improving their individual drought/water conservation plans. Focus in the Hāna sector should be on catchment systems and contingency supply to supplement or substitute catchment when necessary.		\$50,000	MDWS CWRM DOH	2				
# # #	Ensure DHHL water resource reservation requests are allocated to meet DHHL water needs for the Waikiu Project.	Provide for DHHL needs	N/A	CWRM	1				
# # # #	Prohibit the commercial bottling of water from the region.	Maintain sustainable resources	N/A Maui county ordinance State ordinance	Maui County Council State legislature	1				
# # # #	When prioritizing additional available water resources, Kuleana users have the highest priority, followed by cultural uses, then affordable housing.	Protect cultural resources Manage water equitably	N/A	CWRM Maui County	1				

	STRATEGY	PLANNING OBJECTIVES	ESTIMATED COST	AGENCY	TIME-FRAME	Not Begun	In Progress	Completed	Ongoing
KAHIKINUI									
RESOURCE MANAGEMENT									
18.1	Support and provide broad based funding to sustain and expand watershed protection and restoration on a landscape level on leeward Haleakalā for long term habitat augmentation and water security.	Maintain sustainable resources	\$950,000 per year	MDWS	1				
		Protect water resources		Maui County					
		Protect and restore streams							
18.2	Support and promote regional grassroots, homestead community and moku initiatives to collaborate with state and land owner partnerships to ensure participation and adequate access and opportunities for traditional uses of the region's natural resources.	Maintain sustainable resources	N/A	Public-private partnerships	1				
		Protect water resources		Aha Moku					
		Protect and restore streams		DLNR					
				Maui County					
CONVENTIONAL WATER SOURCE STRATEGIES									
18.3	DHHL proposed strategies in the 2017 State Water Projects Plan: fog drip catchment system. Recommendation is to combine with groundwater development to supply build-out of Kahikinui homesteads.	Provide for DHHL needs	\$1.8M capital cost	DHHL	1, 2				
		Provide adequate volume of water supply							
		Maximize reliability of water service							
		Minimize adverse environmental impacts							
18.4	MDWS Upper Kula system accommodate existing priority list applications. Potential additional demand (4,000 gpd) depend on MDWS groundwater source development for Upcountry System. Regional domestic groundwater development and catchment systems, including fog drip supplement supply.	Provide adequate volume of water supply	N/A	MDWS	1,2				
		Maximize reliability of water service							
18.5	MDWS and KR collaboratively explore two alternatives: a) improving the existing non-potable system; and b) dual water system with a potable well providing for potable needs as a separate system, and a non-potable system remain to be served by surface water for agricultural use. Explore technical and financial assistance and grant opportunities. Develop non-potable or potable water source and delivery options for fire protection for the Kaupo System and Kahikinui DHHL homestead area.	Maximize reliability of water service	Non-potable system \$750K, \$35.8K per meter	MDWS	1, 2				
			Potable system \$2.6M, \$123.9K per meter	Kaupō Ranch					
				DOH SDWB					
				RCAC					
				HRWA					
18.6	Convene sector-based drought workshops to assist stakeholders in developing or improving their individual drought/water conservation plans. Focus on ranching and may include retaining experts in respective sectors.	Maximize reliability of water service	\$50,000	CWRM	1				
				DLNR DOFAW, NRCS, DOA, DHHL, MDWS, USDA Farm Services Agency					
				Kaupō Ranch, Ulupalakua Ranch, Haleakalā Ranch					

	STRATEGY	PLANNING OBJECTIVES	ESTIMATED COST	AGENCY	TIME-FRAME	Not Begun	In Progress	Completed	Ongoing
LAHAINA									
RESOURCE MANAGEMENT									
19.1	Continue Maui County financial support for watershed management partnerships' fencing and weed eradication efforts.	Maintain sustainable resources	\$0.7M - \$0.8M - per year/\$14 per watershed acre (47,321 ac)	MDWS	1				
		Protect water resources		Maui County					
		Protect and restore streams							
19.2	Support local initiatives that seek mauka to makai/traditional ahupua'a management. Educate and raise public awareness of ahupua'a management to foster partnerships for use and management of	Maintain sustainable resources	N/A	Public-private partnerships	1				
		Protect water resources		Aha Moku					
		Protect and restore streams		DLNR Maui County					
CONSERVATION									
19.3	Undertake comprehensive study of Maui Land & Pine, former Pioneer Mill and Lahainaluna ditches in AWUDP update	Maintain sustainable resources	N/A	DOA	1, 2				
		Protect water resources		Private purveyors					
		Protect and restore streams		MDWS					
		Protect cultural resources							
CONVENTIONAL WATER SOURCE STRATEGIES									
19.4	Develop basal groundwater wells to provide adequate water supply for planned population growth, maintaining a buffer to sustainable yield	Provide adequate volume of water supply	3.50/1,000 gallons	MDSWS	1, 2				
		Maximize reliability of water service		Public Water Systems					
		Minimize adverse environmental impacts							
		Minimize cost of water supply							
19.5	Ensure "smart source development" guided by available data and modeling results to optimize pumpage, mitigate salt water intrusion and preserve regional resources with adequate distribution to Launiupoko and Honolua aquifers	Maintain sustainable resources	N/A	MDSWS	1				
		Protect water resources		Private purveyors DHHL					
		Minimize adverse environmental impacts							
		Manage water equitably							
19.6	Develop non-potable groundwater to offset reduced stream flow diversions to meet established IIFS and provide reliable drought source.	Protect and restore streams	N/A	MDWS	1				
		Protect cultural resources		Private purveyors DHHL					
		Provide adequate volume of water supply							
19.7	Install a gage at Kanahā stream above existing intakes to collect stream flow data in order to initiate assessment of Instream Flow Standards. Prioritize IFS for diverted streams.	Maintain sustainable resources	\$25K - \$35K installation. Annual monitoring \$15K/year	MDSWS	1				
		Protect water resources		CWRM					
		Manage water equitably		USGS					
19.8	Seasonal use of surface water to take advantage of affordable supply in wet season and shift non-instream needs to groundwater and alternative supply when available in dry season to promote stream restoration	Protect and restore streams	Surface water use: \$1.90 - \$2.15/1000 gal	CWRM	1, 2				
		Protect cultural resources	Basal well from \$3.50/1000 gal	MDWS					
		Provide adequate volume of water supply		Private purveyors					
		Minimize cost of water supply							
19.9	Interconnect MDWS subsystems and develop contingency agreements between purveyors in the region.	Maximize reliability of water service	\$12.3M	MDWS	2				
		Maximize efficiency of water use		Private purveyors					
				DHHL					
ALTERNATIVE WATER SOURCE STRATEGIES									
19.10	Support capital improvement funding for recycled water projects and needed infrastructure expansion in the Lahaina region to offset potable water to the maximum extent feasible.	Maximize efficiency of water use	\$25.9M	DEM	2				
		Maintain consistency with General and Community Plans		MDWS					
				Private purveyors					
				Private developers					
19.11	Explore Kahoma Stream flood control project to collect and convey storm-water for agricultural use.	Minimize adverse environmental impacts	\$12.9M	DPW	2				
		Maximize efficiency of water use		DOA					